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JOURNAL OF THE
AMERICAN DIETETIC ASSOCIATION

VOLUME 16 June–July, 1940 NUMBER 6

A SURVEY OF THE HOSPITAL DIETITIAN AND HER JOB. PART I[1]

S. MARGARET GILLAM

Department of Nutrition, The New York Hospital, New York

THE American Dietetic Association is inherently interested in the professional status, relationships, and responsibilities of the hospital dietitian as she appears today in her various positions. The Association, recognizing its obligation, initiated this study in the form of a survey to acquire statistics which might be available to the membership. However, more far-reaching from the Association's viewpoint should be the results of this study in promoting and improving the efficiency of the work of the dietitian throughout the hospital field. The Association at this time, in order to protect the high standards which have been established for hospital dietitians, needs this pertinent information which can be presented to other related organizations. It is felt that this type of information will also be of value to hospital superintendents in acquainting them further with the qualifications and responsibilities of the dietitian.

The first questionnaire (1938) on "The Survey of the Hospital Dietitian and Her Job" was sent to the 231 hospitals which had responded to Dr. Grace Augustine's study on "Labor Policies in Hospitals." In addition, a few questionnaires were mailed out at the request of hospital dietitians, and they were also sent to hospitals giving the approved course for student dietitians if these hospitals had not been previously included. Eighty-four questionnaires were received and tabulated and a preliminary report was given at the 1938 annual meeting.

The next year (1939) it was decided that the study should be continued to obtain more representative information. The questionnaire subsequently was sent to all hospitals having a dietitian who had membership in the American Dietetic Association, providing the hospital had not previously responded to the questionnaire. The questionnaire was mailed to 1162 hospitals.

Through the invaluable assistance of the administration section chairmen in the state associations carrying on follow-up work with the hospitals in their states, 413 questionnaires were filled

[1] Conducted under the auspices of the American Dietetic Association by a subcommittee of the Administration Section under the chairmanship of S. Margaret Gillam. Acknowledgement is due Ruth Galbraith, Cedar Crest College; Marion Brian, Simmons College; Marie Bell and Matilda Italiano, Hunter College.

out and returned. This report for the two-year study now represents information from 497 of our outstanding hospitals.

The appreciation of the committee is extended to the dietitians and their staffs in the various hospitals who have spent endless hours collecting and recording the information requested in the study. We trust that they may be partly repaid by seeing the results of this work used toward raising the standards and working conditions in the field of hospital dietetics.

The task of recording the information received from approximately 195,000 questions was met through the Volunteer Service of the New York Hospital. Five college students spent their summer vacation assembling the information and tabulating it for the use of the Association. The chairman wishes in this report to express her appreciation to them for their untiring, painstaking and splendid work.

The source of the information in this study is listed by states according to the geographical section of the country, and shows that every state except Vermont is represented. The eastern states sent in 169 replies, the southern 89, the central and midwestern 161, and the western states 78 replies. In order that the material might be more representative and usable, the replies were tabulated in five groups according to the bed capacity.

		Hospitals reporting
Group I	Up to 75 beds	63
Group II	75 to 125 beds	99
Group III	125 to 300 beds	186
Group IV	300 to 500 beds	59
Group V	500 and over	90
Total		497

Four hundred and thirty-nine of the hospitals indicate that they are approved by the American College of Surgeons. They show a total bed capacity of 175,482 and an average occupancy of 73 per cent.

The data in the questionnaire in 34 replies was furnished by the superintendent and in all others by the dietitian.

It is interesting to note that 408 of these hospitals require that the staff dietitians have a college degree.

There is a total of 1145 dietitians represented in the report, of whom 893 are active members of the American Dietetic Association and 61 are associate members.

		Dietitians per hospital	Number of beds per dietitian
Group I	shows	1.04	50
Group II	"	1.16	86
Group III	"	1.81	78
Group IV	"	2.62	134
Group V	"	5.2	244

The report reveals noticeable facts in regard to the length of service of the dietitian; six have held their present positions over 25 years, and 106 between 10 and 15 years. However, 497 of the dietitians have been in their present positions less than three years. Three hundred and eighty-one have had experience in other fields than hospital dietetics.

The dietitian's salary is extremely helpful information to have at hand. The chief dietitian receives from $50 to $500 per month, with by far the majority of dietitians receiving between $90 and $160 per month. The assistant dietitian receives from $50 to $220 per month with most assistant dietitians receiving between $80 and $170 per month. All except 46 dieti-

tians have room as well as meals included with the cash salary. The living out allowance ranges from $10 to $60 per month with $25 to $30 being the allowance most often given.

The hours of work for the dietitian vary greatly. The majority work an 8-hour day and a 48-hour week; however, some are working a 12-hour day and a 56-hour week.

Only 13 per cent of the dietitians work straight hours and those working split hours have a spread of hours from 5:30 a.m. to 7 p.m., or 7 a.m. to 8:30 p.m. with a spread of from 7 a.m. to 7 p.m. in most instances.

Thirty of the dietitians have 2 days off per week, 287 have 1½ days and about one-half of those listed in the report have one day off per week.

The variation in the length of vacation is very striking; about one-half of those reporting received 1 month or 4 weeks, while almost one-half received 2 weeks and 17 received no vacation.

Hospitals, especially in the last few years, have begun to recognize the importance of the physical examination as an economy measure; 185 hospitals, however, report that a physical examination is not given to employees. The report brings out many interesting facts concerning management of employees which will be helpful to dietitians.

These hospitals spend yearly from $6 to nearly $2000 for uniforms for employees. Much information has been collected in this report concerning various phases of the employee uniform problem.

Whether the dietitian or a purchasing agent buys food and supplies for the hospital seems to be related directly to the size of the institution. Until we reach Group IV, hospitals of 300 to 500 beds, the dietitian leads by far as the buyer of foods; in Group IV the hospitals are almost equally divided between giving this responsibility to the dietitian and purchasing agent. However, in the hospitals of over 500 beds the dietitian in many institutions still carries on the buying function. In most institutions the dietitian controls the quality even though she does not buy directly. In about one-half of the hospitals reporting, the dietitian has charge of the food stores. For the details concerning the purchasing function and food control, menu planning and preparation of food, this report provides much data.

Food service always is a subject of much interest to hospital superintendents as well as to dietitians. Shall the food service to patients be directly supervised by the nurse or dietitian? In two-thirds of the hospitals it is reported to be under the direction of the dietitian. Formula preparations, however, in two-thirds of the hospitals appear to be under the supervision of someone other than the dietitian. Except for a few hospitals, the food service to personnel is directly supervised by the dietitian. For private patients, the type of food service is equally divided between centralized and decentralized, and for ward service 189 have centralized and 286 decentralized service. A selective menu for private patients is used by 194 while 10 use this for ward patients.

For the staff, waitress service is provided and the service for student nurses is about equally divided between the waitress and cafeteria plan. Thirty-five of the hospitals operate pay cafe-

terias for their employees and 14 operate cafeterias for the medical students.

The data concerning control methods in the food departments which have been worked out by the dietitians is a fascinating story in itself and would furnish excellent material for future papers on the subject. One method used by 60 hospitals is the weighing of edible food waste. Twenty-seven hospitals contributed their data and the average of edible waste per meal is 3.16 oz. for private patients, 2.52 for ward patients and 3.2 for personnel. These figures are interesting for comparative purposes.

More recently in our colleges there has been considerable emphasis on food accounting as a necessary course for prospective dietitians. This seems very essential, for in 210 of the hospitals the dietitian carries on the food cost accounting. However, only 250, or about one-half of the hospitals operate their food departments on a budget. Herein, it would seem, the dietitian has a field that should be explored extensively in order that food departments may operate with a plan for expenditures and therefore more intelligently and independently.

The expenditures for raw food reported by 321 hospitals amount to over 22 million dollars yearly. It should be noted that only 321 hospitals were able to give figures on food costs. The range in raw food cost is from about $.08 to $.27 per meal with an average of $.12 to $.14. The cost of payroll per meal varies from $.003 to $.18 per meal, the average being between $.04 and $.07 per meal. Supplies cost from $.001 to $.05 per meal and the average is $.006 per meal. The tabulated report should be consulted for further statistical information on costs. Dietitians should not be content to manage their departments unbudgeted and without an accounting system to give the necessary control. Generally the dietitian must initiate her own control and accounting system and once established it gives her great peace of mind and satisfaction.

The classification for food expenditures as given in the questionnaire was prepared by Drs. Mary deGarmo Bryan and Mary Swartz Rose. The purpose of this grouping is to classify expenditures according to food requirements for an adequate diet. More dietitians might try setting up their food expenditures according to this plan and report their findings when using it as a guide for estimating the adequacy of the diet. The data received on classified food expenditures is omitted from this report.

The details of the educational phase of the dietitian's job as studied in the questionnaire will be published in a future issue of this JOURNAL.

Details given in this report are presented in tabular form. The study brings together a mass of material for informative and reference purposes.

Letters which accompanied some of the questionnaires indicated that many dietitians are finding their positions a real challenge. This study should acquaint our Executive Board with facts concerning the dietitian's job and the problems which so many are facing in their respective hospitals. This knowledge should be an aid in planning the Association activities so that real assistance may be given those dietitians who are faced with almost superhuman tasks. The letters and personal notes received

from many dietitians were very inspirational as they gave us faith in our study and its value to them as dietitians.

The information assembled during the survey has been listed by states according to the geographical section of the country, and indicates that every state is represented except Vermont. However, for tabulation purposes in the report the hospitals are classified and grouped according to the bed capacity as follows:

		Hospitals reporting
Group I	Up to 75 beds	63
Group II	75 to 125 beds	99
Group III	125 to 300 beds	186
Group IV	300 to 500 beds	59
Group V	500 beds and over	90

Information originated from the following geographical sections:

	Me.	N. H.	Vt.	Mass.	R. I.	Conn.	N. Y.	Pa.	N. J.	Md.	Del.	Total reporting
EASTERN STATES												
Group I	3	2		1		1	2	4				13
Group II				2		1	12	4			1	20
Group III	2	2		12	1	1	24	23	8	4	3	80
Group IV				2	1	2	6	8	4	2		25
Group V				3		2	16	6	1	3		31
Totals	5	4	—	20	2	7	60	45	13	9	4	169

	Ala.	Ark.	Fla.	Ga.	Ky.	La.	Miss.	N. C.	S. C.	Okla.	Tenn.	Tex.	Va.	W. Va.	D. C.	Total reporting
SOUTHERN STATES																
Group I			2	2			3	5	2	3		2	2	1		22
Group II	1						1	3	2	1	1	3	3	4		19
Group III	1	1	1	1				4	4		3	2	4		1	22
Group IV		1		1			1		2	1	2	2	2		3	15
Group V					1	1			1	1	1	2	2		2	11
Totals	2	2	3	4	1	1	5	12	11	6	7	11	13	5	6	89

	Ill.	Ind.	Iowa	Kan.	Mich.	Minn.	Mo.	Neb.	N. D.	S. D.	Ohio	Wis.	Total reporting
CENTRAL OR MIDWESTERN STATES													
Group I		1		4	4			2			4	2	17
Group II	10	2	4	4	3	2	2			1	5	5	38
Group III	12	5	2	3	10	7	5	2	2		5	4	57
Group IV	3				2	1			1		4		11
Group V	6	4	2	1	7	3	3	3			6	3	38
Totals	31	12	8	12	26	13	10	7	3	1	24	14	161

	Calif.	Colo.	Idaho	Mont.	Nev.	New Mex.	Ariz.	Ore.	Utah	Wash.	Wyo.	Total reporting
WESTERN STATES												
Group I	5			2					2	2		11
Group II	9	2	2	1	1	1		2		3	1	22
Group III	9	4		1		1	2		3	7		27
Group IV	3							4		1		8
Group V	6	1	1							2		10
Totals	32	7	3	4	1	2	2	6	5	15	1	78

Source of Information According to Hospital Classification	Group I	Group II	Group III	Group IV	Group V	Totals
Federal	1	1	2	7	11	22
State	7	13	9	15	14	58
County	4	8	12	5	12	41
Municipal	8	8	5	5	13	39
Catholic	1	10	25	7	1	44
Denominational—Protestant	6	11	23	6	5	51
Industrial		3	2	1	1	7
Jewish			2		5	7
Proprietary	12	13	4	1	1	31
Voluntary	11	24	45	11	11	102
Private		4	7	1	1	13
Home for Aged					1	1
No answer	13	4	66		14	121
Total reporting	63	99	186	59	90	497

Source of Information According to Type of Hospital	Group I	Group II	Group III	Group IV	Group V	Totals
Children	4	4	7	2	5	22
Chronic			1	2	8	11
Communicable Diseases		1	1	2	7	11
Convalescent	1		1	1	5	8
Criminal					1	1
General	51	85	118	41	41	336
Maternity	1	2	5	1	10	19
Mental	1	1	1		7	10
Tuberculosis	2	5	9	10	3	29
Home for Aged					2	2
Institution and Hospital					1	1
No answer	3	1	43			47
Total reporting	63	99	186	59	90	497

Number of Hospitals Offering Training	Group I	Group II	Group III	Group IV	Group V	Totals
Interns	5	27	110	47	57	246
Nurses	28	57	109	41	48	283
Dietitian	4	10	30	21	25	90
No answer		5				5
Total reporting	37	99	249	109	130	624

Hospitals Approved by American College of Surgeons	Yes	No	No answer	Total reporting
Group I	54	9		63
Group II	87	9	3	99
Group III	170	14	2	186
Group IV	55	2	2	59
Group V	73	11	6	90
Totals	439	45	13	497

	Low	High	Av.	Total beds in all hospitals	Per cent occupancy Low	High	Av.	Beds represented Priv.	Semi-Priv.	Ward	Bassinet
BED CAPACITY OF HOSPITALS											
Group I....	25	74	53	3,376	23%	92%	49%	1,197	631	1,027	532
Group II...	75	124	103	9,938	42%	100%	70%	2,979	1,632	1,044	1,246
Group III ..	125	299	204	26,211	47%	100%	80%	6,179	3,922	9,343	3,133
Group IV ..	300	499	359	20,840	38%	100%	81%	3,053	2,145	10,160	1,755
Group V ...	500	9,253	1,338	115,117	66%	100%	89%	3,421	3,023	25,718	1,792
Totals ...	1025	10,249	2,057	175,482			73.5%	16,829	11,353	36,692	8,458

	Group I	Group II	Group III	Group IV	Group V	Total
STANDARDS FOR STAFF DIETITIANS SPECIFIED BY HOSPITAL						
Degree required	58	83	166	51	50	408
Degree not required		4	6		13	23
No answer	5	12	14	8	27	66
B.S. degree required	51	69	148	35	49	352
A.B. degree required	8	11	11	6	14	50
No answer	4	19	27	18	27	95
Student training or equivalent required	47	70	149	51	55	372
Student training not required			5		26	31
No answer	16	29	32	8	9	94
Civil service appointment	1	3	11	25	46	86
Not civil service appointment	35	56	123	2	27	243
No answer	27	40	52	32	17	168
State residence required	4	6	18	6	47	83
State residence not required	37	57	115	41	29	297
No answer	22	36	53	12	14	117
U. S. citizenship required	28	62	107	40	58	295
U. S. citizenship not required	10	15	42	11	21	99
No answer	25	22	37	8	11	103
Total hospitals reporting	63	99	186	59	90	497
TITLE OF PERSON FURNISHING DATA FOR REPORT						
Dietitian	46	48	87	13	18	212
Chief Dietitian	8	30	75	36	35	184
Executive Dietitian		1	2		4	7
Director of Department		2	3	4	6	15
Assistant Dietitian	1	1	5	2	4	13
Supervising Dietitian		1	4	1	17	23
Senior Dietitian		1			1	2
Administrative Dietitian		1		3	1	5
Department Dietitian		1			1	2
Director of Hospital		2	1			3
Superintendent of Hospital	8	9	9		1	27
Medical Superintendent		2			2	4
Total hospitals reporting	63	99	186	59	90	497

Number of Dietitians in Hospitals	Group I		Group II		Group III		Group IV		Group V	
	Number of hospitals	Total dietitians	Number of hospitals	Total dietitians	Number of hospitals	Total dietitians	Number of Hospitals	Total dietitians	Number of hospitals	Total dietitians
1	60	60	83	83	79	79	12	12	18	18
2	1	2	16	32	71	142	13	26	16	32
3					28	84	18	54	6	18
4	1	4			7	28	7	28	9	36
5					1	5	3	15	8	40
6							3	18	5	30
7							1	7	6	42
8							1	8	6	48
9									6	54
10									2	20
11									1	11
12										
13									1	13
14									2	28
15										
16									1	16
17										
18										
19										
20									1	20
21										
22									1	22
23									1	23
Totals	62	66	99	115	186	338	58	158	90	471
No answer	1						1			
Total reporting	63		99		186		59		90	

Statistics Concerning Dietitians	Group I	Group II	Group III	Group IV	Group V	Totals
General						
No. dietitians reported	66	115	338	155	471	1145
Av. number per hospital	1.04	1.16	1.81	2.62	5.2	—
Av. number per 100 beds	.8	.9	.64	.23	2.9	—
Active membership in A.D.A.	56	97	259	136	345	893
Non-members A.D.A.	7	2	54	23	72	158
Associate membership in A.D.A.	9	7	26	6	13	61
Total memberships in other professional organizations	43	61	168	47	188	507
Academic Preparation						
B.S. degree	51	71	241	119	332	814
A.B. "	6	17	26	18	21	88
Ph.B. "			2		1	3
B.H.Sc. "					3	3
B.E. "	2			1	2	5
M.S. "	1		4	1	19	25
M.A. "	2		4	1	19	26
Ph.D. "		1			2	3
Diploma		12	24	17	24	77
No degree		2	22	7	14	45
No answer	6	4		1	7	18
Total hospitals reporting	63	99	186	59	90	497
	492					

Number Months Student Dietitian Training	Group I	Group II	Group III	Group IV	Group V	Totals
18 months	1	2	1		2	6
13 "			1	1	1	3
12 "	39	41	130	59	213	482
11 "			2	1		3
10 "	1	4	12	5	12	34
9 "	6	11	21	13	26	77
8 "	3	6	21	10	22	62
7 "			2	4	2	8
6 "	11	34	82	49	98	274
5 "			2		1	3
4 "		4	12	2	12	30
3 "		6	11	6	7	30
2 "			5		4	9
None	4	2	31	12	24	73
No answer	6	3	1	1	7	18
Total hospitals reporting	63	99	186	59	90	497
Number of Years at Present Hospital						
Over 25 years		1	2	2		5
20 years up to 25 years		1		2	1	4
15 " " " 20 "		1	8	4	15	28
10 " " " 15 "	2	5	38	13	47	103
9 " " " 10 "	1	5	11	9	11	37
8 " " " 9 "		2	10	9	10	31
7 " " " 8 "	2	6	6	4	16	34
6 " " " 7 "	2	5	8	4	14	33
5 " " " 6 "	1	6	20	6	19	52
4 " " " 5 "	3	7	20	9	33	72
3 " " " 4 "	8	11	29	13	46	107
2 " " " 3 "	10	17	44	26	66	163
1 " " " 2 "	21	24	51	40	80	216
Under 1 year	15	20	59	28	91	213
No answer	2	1	8	2	6	19
Total hospitals reporting	63	99	186	59	90	497
Number of Years in Present Position						
Over 25 years	2	1	1	2		6
20 years up to 25 years	1	1	1	1	1	5
15 " " " 20 "	2	1	7	3	8	21
10 " " " 15 "	14	5	36	14	37	106
9 " " " 10 "	10	5	10	10	6	41
8 " " " 9 "	10	2	8	10	9	39
7 " " " 8 "	3	5	7	3	10	28
6 " " " 7 "	3	7	10	3	8	31
5 " " " 6 "	7	5	16	7	14	49
4 " " " 5 "	5	7	20	5	30	67
3 " " " 4 "	12	7	30	12	39	100
2 " " " 3 "	26	24	42	26	60	178
1 " " " 2 "	43	22	56	43	103	267
Under 1 year	29	18	52	29	102	230
No answer	5	2	18	5	10	40
Total hospitals reporting	63	99	186	59	90	497

	Group I	Group II	Group III	Group IV	Group V	Totals
Number of Years Experience in Hospital Field						
Over 25 years		1	3	4	3	11
20 years to 25 years	1	4	12	7	10	34
15 " " 20 "		8	20	12	23	63
10 " " 15 "	5	21	46	25	68	165
9 " " 10 "	2	7	11	9	13	42
8 " " 9 "	1	5	13	10	26	55
7 " " 8 "	5	5	19	7	21	57
6 " " 7 "	3	3	10	6	22	40
5 " " 6 "	9	6	23	10	35	83
4 " " 5 "	4	10	18	8	47	87
3 " " 4 "	9	8	34	17	37	105
2 " " 3 "	7	11	31	14	42	105
1 " " 2 "	11	9	29	21	33	103
Under 1 year	7	6	18	16	30	77
No experience		3	5	1	7	16
No answer	3	5	18	6	20	52
Total hospitals reporting	63	99	186	59	90	497
Number Years Experience in Other Field						
Over 10 years	3	4	8	7	15	37
9 years up to 10 years					1	1
8 " " " 9 "		2	4	1	3	10
7 " " " 8 "			2	3	4	9
6 " " " 7 "			5	1	7	13
5 " " " 6 "	4	5	8	2	14	33
4 " " " 5 "	2	6	11	1	18	38
3 " " " 4 "	3	3	13	9	22	50
2 " " " 3 "	3	6	16	11	23	59
1 " " " 2 "	4	9	33	22	33	101
Under 1 year		4	3		23	30
None	37	67	166	81	185	536
No answer	11	6	42	31	68	158
Total hospitals reporting	63	99	186	59	90	497
*Monthly Cash Salary of Chief Dietitian Including Maintenance**						
$50–$60	2				1	3
60– 70	4	1				5
70– 80	6	5	4			15
80– 90	13	15	8		1	37
90–100	12	16	15	1	3	47
100–110	16	15	38	5	14	88
110–120	6	9	19	4	1	39
120–130	7	9	30	11	6	63
130–140		4	16	5	2	27
140–150		3	6	6	6	21
150–160	2	1	18	6	11	38
160–170			4	1	5	10
170–180		2	7	6	4	19
180–190	1		1	2	3	7
190–200			1	2	3	6
200–210		2	3	6	4	15
210–220			1		1	2

	Group I	Group II	Group III	Group IV	Group V	Totals
220–230			1		4	5
230–240						
240–250						
250–300					7	7
300–350					1	1
350–400					2	2
400–450						
450–500					1	1
No answer	8	2	8	4	6	28
Total hospitals reporting	63	99	186	59	90	497
Total chief dietitians on which salaries are reported	69	82	172	55	80	458
*Monthly Cash Salary of Assistant Dietitian Including Maintenance**						
$50–$60	1		5	1	4	11
60– 70	6		10	1	7	24
70– 80		3	24	18	40	85
80– 90		2	32	28	47	109
90–100	1	1	29	21	37	89
100–110			22	15	70	107
110–120	1		4	13	28	46
120–130		1	5	9	50	65
130–140			3	2	16	21
140–150			1		15	16
150–160			2	2	17	21
160–170					10	10
170–180					3	3
180–190					5	5
190–200					5	5
200–210					2	2
210–220					4	4
No answer			5			5
Total hospitals reporting	63	99	186	59	90	497
Total assistant dietitians on which salaries are reported	9	7	137	110	360	623
Number Dietitians Living Out		2	10	8	26	46
Living out allowance per month						
Under $10	1	1		3		5
$10 to $15	4	2	9	7	23	45
15 " 20	6	10	23	18	70	127
20 " 25	12	26	57	39	29	163
25 " 30	22	32	102	76	44	276
30 " 40	10	19	65	12	39	145
40 " 50	1	2	3			6
50 " 60		1	1		1	3
60 and over			1			1
No answer	10	20	74	12		116
Total hospitals reporting	63	99	186	59	90	497

* Of the 1082 chief and assistant dietitians whose salaries are reported, only 46 do not have room included, and only 20 do not have laundry included. The detail as to which salaries do not include these items of maintenance could not be shown in this report.

	Group I	Group II	Group III	Group IV	Group V	Totals
Laundry						
Laundry of uniforms allowed	50	96	302	160	240	848
Laundry of personal clothing allowed	19	33	113	72	135	372
Laundry not allowed	2	8	3		7	20
No answer	14	3	28	15	28	88
Total hospitals reporting	63	99	186	59	90	497
Number of Uniforms Allowed Per Week						
3 uniforms or under	12	11	33	17	34	107
4 "	14	28	61	18	73	194
5 "	6	8	33	18	19	84
6 "	5	14	68	64	68	219
7 "	4	9	13	8	11	45
8 "			9	1		10
Not limited	8	25	78	28	54	193
None allowed		6	4		2	12
No answer	18	10	32	19	8	87
Total hospitals reporting	63	99	186	59	90	497
Work Schedule						
Number working straight hours	4	6	35	20	57	122
" " split hours	60	102	283	140	220	805
No answer	5	4	12	7	5	33
Spread of hours in schedule						
High	6–7	7–8:30	6–7:30	5:30–7	5–7	
Low	8–4	8–4	8–2	8–4	8–4	
Average	7–7	7–7	7–7	7–7	7–7	
Hours worked per day						
High	10	12	12	9½	11	
Low	7	7	7	7	7	
Average	8	8	8	8	8	
Hours worked per week						
High	56	56	56	56	56	
Low	40	40	40	40	40	
Average	48	48	48	48	48	
Time off per week						
2 days	3	4	7		16	30
1½ days	5	13	53	34	182	287
1 day	40	76	199	119	234	668
½ day each week & 1 day alternating weeks	6		22	16	41	85
½ day		18	15		4	37
Vacation with Pay						
One month	6	22	89	62	108	287
4 weeks	9	11	65	43	188	316
3 weeks	6	7	34	11	66	124
2 weeks	36	58	111	44	120	369
1 week	4	7	8	5	4	28
No vacation		4	10	1	2	17
	496					

	Group I	Group II	Group III	Group IV	Group V	Totals
Holidays Given in Addition to Vacation						
All holidays		7	11	10	18	46
12			2		27	29
11					2	2
10			2		6	8
9			3	1	31	35
8		2	3	13	49	67
7		3	2	5	63	73
6	3	5	17	7	49	81
5	4	5	23	13	37	82
4	9	22	54	42	93	220
3	10	20	54	18	37	139
2	12	9	44	30	19	114
1	5	5	17		14	41
None	8	27	39	19	25	118
Number of Days Sick Leave with Pay						
Days not limited and pay given	3	6	15	4	10	38
" " " " no pay given	3	7	9	1	2	22
28 days and pay	1	2	13	4	5	25
21 " " "	1	3	2	1	2	9
14 " " "	21	28	65	26	41	181
10 " " "				10	10	20
7 " " "	11	15	28		8	62
Under 7 days and pay			5	10	2	17
Reasonable Free Hospitalization						
Yes	39	53	102	34	52	280
No	11	30	62	19	32	154
Medical Care Given Without Charge						
Yes	47	70	151	49	68	385
No	9	25	34	10	22	100
Membership in Hospital Plan of Insurance						
Yes	4	2	28	4	7	85
No	59	97	158	55	83	452
Name of Hospital Food Department						
Department of Dietetics			7		9	16
Dietary Department	55	92	166	46	67	426
Department of Nutrition	1	3	4	3	4	15
Department of Dietetics & Housekeeping	1			7	1	9
Dietetic Service					1	1
Kitchen	2	2	5	1	3	13
Food Service Department		1	2		2	5
Culinary Department					1	1
Commissary Department		1			2	3
No answer	4		2	2		8

	Group I	Group II	Group III	Group IV	Group V	Totals
Head Dietitian Responsible to:						
Superintendent	48	77	143	41	40	349
Director of Hospital	2	7	16	5	11	41
Manager	3	5	11	4	6	29
Chef Steward			1		4	5
Commissary					1	1
Medical Director	4	9	5	2	6	26
Managing Officer	5				2	7
Superintendent of Nurses	1	1			1	3
Associate Director					1	1
Director of Administration					4	4
Manager of Health & Charities					1	1
Business Executive					2	2
Executive Director					1	1
No answer			10	7	9	26
Number of Student Dietitians in Each Hospital						
None	46	78	128	36	53	341
1 student	2	7	17	5	2	33
2 students	1		6	1	4	12
3 "	1	1	3	3	1	9
4 "			3	5	1	9
5 "			1		1	2
6 "	1		3	2	2	8
7 "			1	3	1	5
8 "				1	1	2
9 "			2	1	1	4
10 to 15 students			2		8	10
15 to 20 "					3	3
20 to 25 "					3	3
No answer	12	13	20	2	9	56
Total hospitals reporting	63	99	186	59	90	497
STATISTICS CONCERNING EMPLOYEES						
Number of Full-Time Employees						
High	13	35	50	90	250	
Low	1	1	5	1	5	
Average	5	8	21	45	25	
Number of Part-Time Employees						
High	16	15	56	300	350	
Low	1	1	5	1	1	
Average	3	4	7	3	4	
Employment Function of Food Department						
Yes	43	77	150	47	45	362
No	14	18	25	8	25	90
No answer	6	4	11	4	20	45

	Group I	Group II	Group III	Group IV	Group V	Totals
Dietitian in Favor of Personnel Department						
Yes	22	31	53	27	51	184
No	28	46	97	18	21	210
No answer	13	22	36	14	18	103
Health Examination Given Employees						
Yes	35	50	109	32	70	296
No	28	49	73	21	14	185
No answer			4	6	6	16
Hospital Has Personnel Health Clinic						
Yes	52	17	47	26	42	184
No	5	77	133	31	32	278
No answer	6	5	6	2	16	35
Manual for Employees						
Yes	4	9	21	15	30	79
No	56	90	161	40	47	394
No answer	3		4	4	13	24
Rules for Employees' Personal Cleanliness						
Yes	10	19	46	22	20	117
No	46	79	133	35	60	353
No answer	7	1	7	2	10	27
Written Schedule for Each Job						
Yes	42	63	56	41	54	256
No	17	36	123	16	24	216
No answer	4		7	2	12	25
Written Schedule for Some Parts of Employees' Work						
Yes	40	53	114	37	60	304
No	19	45	64	13	18	159
No answer	4	1	8	9	12	34
Classes for Employees						
Yes	23	89	30	6	13	161
No	36	10	152	50	60	308
No answer	4		4	4	16	28
Group Meetings of Employees						
Yes	23	31	77	28	45	204
No	36	68	97	25	25	251
No answer	4		2	6	20	42
Job Analysis for Each Job						
Yes	23	29	45	28	37	162
No	31	64	129	26	45	295
No answer	9	6	12	5	8	40

	Group I	Group II	Group III	Group IV	Group V	Totals
Rating Scale Used for Employees						
Yes	7	6	17	8	29	67
No	46	89	154	44	50	383
No answer	10	4	15	7	11	47
Check List Used for Performance						
Yes	5	5	19	9	14	52
No	43	88	150	40	60	381
No answer	15	6	17	10	16	64
Uniforms Required for All Employees						
Yes	37	61	138	45	73	354
No	22	36	44	8	12	122
No answer	4	2	4	6	5	21
Uniforms Furnished by Hospital						
Yes	13	21	53	32	39	158
No	40	73	126	22	39	300
No answer	10	5	7	5	12	39
Variety of Uniforms Used						
Yes	23	38	74	24	42	201
No	17	39	76	22	30	184
No answer	23	22	36	13	18	112
Uniforms Same for All Women						
Yes	22	34	110	35	38	239
No	10	24	30	8	31	103
No answer	31	41	46	16	21	155
Uniforms Same for All Men						
Yes	17	29	78	29	45	198
No	9	15	35	10	24	93
No answer	37	55	73	20	21	206
Uniforms Charged to:						
Employee	12	21	53	9	17	112
Food Department	5	10	32	20	38	105
Laundry	3	3	8	1		15
Housekeeping	5	4	21	4	1	35
Other	2	6	2			10
No answer	36	55	70	25	34	220
Who Selects Uniforms						
Dietitian	7	21	72	24	30	154
Superintendent	14	19	29	6	9	77
Employee	22	32	34	12	17	117
Business Manager		1	1	1	2	5
State Central Office		1			3	4
Purchasing Agent	1		1	2	1	5
Matron					2	2
Housekeeper	1		10	1	3	15
Medical Supply					1	1
Veterans Administration				3	5	8
Commissary					1	1
Central Purchasing Department					1	1
G. M. C.					1	1
Uniform Commission			5	3		8
No answer	18	25	34	7	14	98
	500					

	Group I	Group II	Group III	Group IV	Group V	Totals
Person in Charge of Uniforms & Exchange						
Dietitian	9	11	49	23	26	118
Superintendent of Nurses			3		1	4
Housekeeper	4	11	21	8	4	48
Matron					2	2
Laundry	1		4	4	6	15
Purchasing Agent					1	1
Head of Uniform Room					1	1
Linen Room Supervisor		2		4	3	9
Head Attendant of Hospital					1	1
Supervising Seamstress		2			1	3
Commissary					1	1
Employees	4	9		1	6	20
Supply Officer			10		3	13
Storekeeper	3	1	7	3	2	16
No answer	42	63	92	16	32	245
Yearly Cost of Uniforms						
Total Cost	$848	$2427	$5291	$3917	$11,719.70	
High	300	600	802	450	2494.00	
Low	9	7	6	10	6	
Average	70	115	99	206.16	325.54	
No answer	50	78	127	34	54	

	Waitress	Waiter	Counter Girl	Pantry Girl	Kitchen helper: Women	Kitchen helper: Men	Cooks	Maids	Porters
Times Per Week Uniforms Changed—All Hospitals									
Once	1	1	—	2	—	—	1	—	1
Twice	32	6	9	14	16	11	9	9	5
Three	121	32	24	51	68	47	68	49	24
Four	34	8	19	23	23	24	36	18	6
Five	8	3	1	8	5	7	6	3	1
Six	8	4	3	4	7	7	20	6	5
Daily	45	45	13	22	32	64	70	29	28
Answer	248	398	428	373	346	337	287	383	427
Total hospitals reporting—497									
Cost of Each Made Uniform—All Hospitals									
$1.00–$1.50	41	18	14	23	31	21	21	20	10
1.50– 2.00	50	15	16	20	34	19	26	25	8
2.00– 2.50	42	6	18	22	23	19	22	16	12
2.50– 3.00	19	7	6	8	9	12	17	9	8
3.00– 3.50	10	9	1	8	4	18	15	5	9
Over $3.50	6	2			2	5	15	3	4
No cost	10	7	7	7	10	10	12	8	8
No answer	319	433	435	409	384	393	369	411	438
Total hospitals reporting—497									

Hair Net or Cap Required	
Yes	278
No	62
No answer	157
Total hospitals reporting	497

Purchasing and Storage of Supplies—Equipment	Purchases made by: Dietitian	Purchasing agent	Business manager	Supt. or director	Another person	No answer
Group I						
Perishables	62		1			
Groceries & staples	59	1	1	2		
Contract purchases	34		1	5		23
Supplies & equipment	33		4	23		3
Group II						
Perishables	83	5			10	1
Groceries & staples	75	6	2	11	4	1
Contract purchases	55	8	4	25		7
Supplies & equipment	39	7	8	39	5	1
Group III						
Perishables	129	22	1	9	23	2
Groceries & staples	99	36	2	23	22	4
Contract purchases	85	30	3	23	21	24
Supplies & equipment	65	34	4	65	12	6
Group IV						
Perishables	31	12	2	4	8	2
Groceries & staples	15	25	4	7	5	3
Contract purchases	15	25	3	6	3	7
Supplies & equipment	14	23	2	10	6	4
Group V						
Perishables	23	34		3	28	2
Groceries & staples	18	50	3	2	13	4
Contract purchases	14	50	2	3	11	10
Supplies & equipment	10	50	2	3	21	4

Does Head of Food Department Make Selection and Control Quality of Supplies	Group I	Group II	Group III	Group IV	Group V	Totals
Yes	22	47	103	39	58	269
No	5	16	27	7	15	70
No answer	36	36	56	13	17	158
Total hospitals reporting	63	99	186	59	90	497

Food Reported Purchased on Contract—Number of Hospitals All Groups Purchasing These Foods on Contract

Number hospitals reporting 497

Milk	Ice cream	Bread	Butter	Canned goods	Frozen foods	Eggs	Fruits & veg.	Staples	Meat	Beverages
68	26	31	48	229	13	26	41	25	50	54

Number Hospitals Receiving Quotations Before Purchase—All Groups

Yes	392
No	43
No answer	62
Total hospitals reporting	497

Number of Companies from which Receive Quotations:	One	Two	Three	Four	Over four	
All groups	4	77	124	64	68	
No answer						160
Total hospitals reporting						497

Title of Person in Charge of Food Stores	Group I	Group II	Group III	Group IV	Group V	Total
Dietitian	53	69	70	10	10	212
Purchasing Agent	1	4	14	4	10	33
Business Manager	1		2		1	4
Superintendent or Director		2	5		5	12
Storekeeper	2	7	51	23	44	127
Other		8	31	15	17	71
No answer	6	9	13	7	3	38
Total hospitals reporting	63	99	186	59	90	497
Title of Person Receiving Food for Hospital						
Dietitian	46	46	47	10	8	157
Purchasing Agent		3	7	11	4	25
Receiving Clerk			12		14	26
Storekeeper	4	11	63	24	45	147
Other	4	23	33	8	14	82
No answer	9	16	24	6	5	60
Total hospitals reporting	63	99	186	59	90	497

How Often Foods Are Purchased—All Hospitals	Perishables	Meat	Groceries
Daily	353	186	5
Three times per week	5	4	
Two times per week	76	97	
Weekly	21	75	197
Monthly and twice monthly			202
No answer	42	135	93
Total hospitals reporting	497	497	497

Specifications Used in Purchasing Food	
Yes	149
No	276
No answer	72
Total hospitals reporting	497

Hospitals Specifying Government Grading	For butter	For meat	For eggs
Yes	321	327	279
No	80	60	97
No answer	96	110	121
Total hospitals reporting	497	497	497

Bread	
Purchased by count of loaves	290
" " weight in pounds	108
Make own	75
No answer	24
Total hospitals reporting	497

Canned Goods	Yes	No	No answer	Total reporting
Tested before purchased	252	184	61	497
Form used for recording tests	105	289	103	497

Equipment, Supplies and Stationery Control	Dietitian	Storekeeper	Other	No answer	Total reporting
Responsible for storage	125	123	164	85	497

	Yes	No	No answer	Total reporting
Requisition system used for issuing	339	88	70	497
Requisitions priced	177	197	123	497

	Dietitian	Storekeeper	Other	No answer	Total reporting
Requisitions priced by	12	51	119	315	497

	Yes	No	No answer	Total reporting
FOOD SERVICE				
Planning Menus				
Menus planned by dietitian	465	18	14	497
Menu suggestion lists used	413	53	31	497

	One	Two	Three	Four	Five	Six	Over six	No answer	Total reporting
How many dietitians plan menus in hospitals.	297	111	35	8	5	6	7	28	497

	Daily	Weekly	Monthly	Time varies	Never	Other	No answer	Total reporting
How often are menus checked for adequacy of food requirements	56	84	68	3	36	76	174	497

	Daily	Thrice weekly	Twice weekly	Weekly	Over one week	No answer	Total reporting
Number days' menus planned at one time	40	21	61	347	20	8	497

	Yes	No	No answer	Total reporting
Preparation of Food				
Direct supervision by dietitian	422	45	30	497
Directions used for preparation of vegetables, fruits and meats	348	106	43	497
Standardized recipes used for preparation	304	133	60	497
Test made on yields from fruits and vegetables	256	172	69	497
Meat cutting tests carried out	76	349	72	497
Control sheets sent to serving units	54	293	150	497
Daily inventory taken of food in kitchen	322	126	49	497

	Dietitian	Nurse	Housekeeper	Other	No answer	Total reporting
Service of Food						
Direct supervision of food service to patients	367	115		10	5	497
Direct supervision of formula preparation	171	262		24	40	497
Direct supervision of food service to personnel	422		19	41	15	497

	Central	Decentralized	No answer	Total reporting
Type of food service to private patients	226	209	62	497
" " " " " semi-private patients	193	222	82	497
" " " " " ward patients	189	286	22	497

	From ward pantry	From special diet kitchen	From main kitchen	No answer	Total reporting
Special diets served	141	289	45	22	497

	Yes	No	No answer	Total reporting
Hospital operating metabolism kitchen	94	348	55	497

	1–5	5–10	10–20	20–30	30–40	40–50	50–70	Over 70	No answer	Total reporting
Number of trays from metabolism kitchen	12	18	31	18	11	8	5	3	391	497

	Private patients	Semi-private	Wards	None used	No answer	Total reporting
Selective menu served	194	55	10	210	28	497

	Waitress	Cafeteria	No answer	Total reporting
Type of service for:				
Staff and doctors	376	70	51	497
Dietitians	309	120	68	497
Student dietitians	103	74	320	497
Student nurses	178	187	232	497
Employees	186	268	43	497
Clerical help	241	178	78	497

	Yes	No	No answer	Total reporting
Does hospital operate a pay cafeteria for:				
Employees	35	425	37	497
Medical students	14	419	65	497

	Yes	No	No answer	Total reporting
Waste Control				
Does hospital weigh edible waste	60	385	52	497

	Private patients	Ward patients	Personnel
Ounces of edible waste per meal as reported by 27 hospitals	6.0	0.7	0.8
	5.6	5.0	7.2
	2.1	3.0	4.0
	0.79	5.6	1.65
	2.5	0.79	0.5
	0.3	2.25	1.63
	5.5	0.3	3.25
	3.0	5.5	0.31
	1.75	3.0	2.02
	3.5	1.9	0.5
	2.3	2.5	0.82
	8.7	3.5	2.5
	1.0	4.92	1.76
	1.3	1.5	1.1
		1.3	8.25
		0.9	1.3
		0.59	6.5
		4.7	1.7
		1.2	2.1
		1.3	9.6
			4.0
			2.5
			3.2
			11.6
			2.39
			3.0
			2.3
Average ounces edible waste per meal	3.16	2.52	3.20
No answer			470
Total hospitals reporting on waste			27

	Yes	No	No answer	Total reporting
CARE OF KITCHEN AND FOOD SERVICE EQUIPMENT				
Card file kept of large equipment and cost	196	211	90	497
Record kept of repairs and cost of repairs	92	282	123	497
Records kept by another department	242	52	203	497
Have written directions for operating equipment	237	135	125	497
Written directions for daily cleaning care	197	238	62	497
Inventory kept of all equipment	320	132	45	497
Inventory taken routinely	304	104	89	497
Routine replacement of equipment to standard	266	141	90	497
Daily and weekly cleaning schedule posted	248	182	67	497
Written directions for use of material and methods in cleaning	113	275	109	497
Operate silver cleaning unit	88	347	62	497
Do you process chinaware	188	207	102	497

	Daily	Twice weekly	Weekly	Monthly	As needed	Other	No answer	Total reporting
How often is china processed	17	4	46	30	18	29	353	497
" " " silver cleaned & polished	18	46	354	11	22	11	34	497

	Hand	Machine	No answer	Total reporting
Silver cleaned by	409	64	24	497

	Dietitian	Storekeeper	Store clerk	Purchasing agent	Business mgr.	Acct. dept. clerk	Other	No answer	Total reporting
ACCOUNTS AND RECORDS									
Cost Accounting Carried on by:									
Group I	41	1	2		5	11		3	63
Group II	57	1	1	1	3	23	5	8	99
Group III	67	2	4	8	16	67	13	9	186
Group IV	23	1	2	2	8	12	3	8	59
Group V	22	3	3	3	12	40		7	90
Totals	210	8	12	14	44	143	21	35	497

	Dietitian	Storekeeper	Supt.	Purchasing agent	Business mgr.	Acct. dept.	Other	No answer	Total reporting
Under Supervision of:									
Group I	20		5		1			37	63
Group II	36	1	9	3	3		1	46	99
Group III	49	3	22	5	13		8	86	186
Group IV	16	1	1		7		4	30	59
Group V	20	2	4	2	5	16		41	90
Totals	141	7	41	10	29	16	13	240	497

	Daily	Weekly	Monthly	Other	No answer	Total reporting
Food Cost Reported						
Group I	7	1	52		3	63
Group II	4	2	86	1	6	99
Group III	25	13	134	1	13	186
Group IV	5	4	46		4	59
Group V	16	11	56		7	90
Totals	57	31	374	2	33	497

	Group I	Group II	Group III	Group IV	Group V	Totals
Units for which separate costs are obtained:						
Ward Patients	1	3	6	2	8	20
Semi-Private	1	2	5	1	13	32
Private	2	3	7	3	14	29
Pay Cafeteria			1		3	4
Nurses' Dining Room	2		10	3	3	18
Doctors' Dining Room	1		7	2	1	11
Clerks' Dining Room		5	5	1	3	14
Employees' Dining Room	2	3	5	1	11	22
None	2	19	33	9	8	71
No answer	52	64	107	37	26	286
Total hospitals reporting	63	99	186	59	90	497

	In total	Allocated to units	No answer	Total Reporting
Payroll Reported	370	59	68	497
Cost of Supplies Reported	357	69	71	497

	Yes	No	No answer	Total Reporting
Budget				
Does department operate on budget	250	208	39	497
Does dietitian make out budget	117	215	165	497
Does dietitian make out personnel budget	69	187	241	497
Does dietitian make out supply and equipment budget	75	205	217	497

	Daily	Weekly	Monthly	Quarterly	Twice yearly	Yearly	No answer	Total reporting
How often is expenditure checked with budget	13	12	198	4	11	23	236	497

	Dietitian	Supt.	Business manager	Comptroller	Acct dept.	Purchasing agent	Other	No answer	Total reporting
By whom checked	94	44	43	13	51	3	17	232	497

	Yes	No	No answer	Total reporting
Special functions charged against food budget	328	50	119	497
Does each department have own budget	56	191	250	497

	Group I	Group II	Group III	Group IV	Group V
Meal Census					
Daily meal census—total					
High	380	754	2,300	5,056	14,600
Average	186	349	573	1,712	4,264
No answer	16	27	31	12	19
Number hospitals reporting	47	72	155	47	71
Daily meal census—private patient total					
High	90	183	455	813	1,300
Average	52	71	144	183	311
No answer	41	77	116	37	72
Number hospitals reporting	22	22	70	22	18
Daily meal census—semi-private total					
High	104	120	282	855	522
Average	17	30	94	193	283
No answer	52	83	150	45	78
Number hospitals reporting	11	16	18	14	12
Daily meal census—ward total					
High	210	272	901	1,364	9,300
Average	62	88	259	457	1,987
No answer	47	78	120	25	42
Number hospitals reporting	16	21	48	34	48
Daily meal census—personnel total					
High	180	474	1,400	1,400	4,234
Average	99	184	434	699	1,325
No answer	39	58	82	18	32
Number hospitals reporting	24	41	104	41	58
Daily baby formulae—total					
High	30	43	44	44	94
Average	5	9	18	24	30
No answer	41	57	101	37	51
Number hospitals reporting	22	42	85	22	39
Daily special diets—total					
High	157	43	140	565	1,810
Average	7	13	34	97	297
No answer	32	40	59	11	26
Number hospitals reporting	31	59	127	48	64
Percentage of special diets to patients' meals					
High	50%	25%	67%	76%	35%
Average	13%	13%	13%	17%	17%
No answer	40	67	102	28	36
Number hospitals reporting	23	32	84	31	54
Total served at special functions					
High	2,700	1,400	2,000	6,336	11,520
Average	382	499	662	1,763	2,477
No answer	40	58	112	35	58
Number hospitals reporting	23	41	74	24	32

	Yes	No	No answer	Total reporting
Meal census counted				
By office—using payroll count and patient count	183	14	300	497
By actual count	308	8	181	497
Are baby formulae included in census	92	265	140	497

	3 formulae to 1 meal	2 formulae to 1 meal	1 formula to 1 meal	No answer	Total reporting
Ratio used in counting baby formulae	13	2	17	465	497

Methods used to obtain actual count of meals	
Coupon	43
Mechanical counter	23
Plates served	45
Waitress count	68
Trays used	59
Other	25
No answer	234
Total hospitals reporting	497

	Group I	Group II	Group III	Group IV	Group V
Expenditures					
Total spent yearly for raw food	$98,373	$1,373,972	$6,034,306	$2,924,062	$12,141,500
High	31,000	53,200	109,000	146,250	884,200
Low	1,200	2,300	17,900	37,000	47,500
Average spent for raw food	3,074	22,160	47,891	73,101	192,722
Number hospitals reporting	32	61	125	40	63
Cost of raw food per meal					
High	$.21	$.26	$.26	$.27	$.20
Low	.10	.13	.08	.08	.07
Average	.14	.147	.12	.13	.137
Number hospitals reporting	27	58	114	35	45
Total spent yearly for payroll	$51,336	$97,240	$1,513,615	$779,813	$3,356,100
High	11,350	12,100	33,800	73,321	303,900
Low	2,400	1,300	2,400	5,721	11,100
Average	1,555	1,834	13,760	25,155	63,322
Number hospitals reporting	33	51	108	31	53
Cost of payroll per meal					
High	$.17	$.18	$.15	$.16	$.17
Low	.005	.003	.01	.018	.004
Average	.06	.040	.06	.07	.044
Number hospitals reporting	20	45	80	28	39

	Group I	Group II	Group III	Group IV	Group V
Total spent yearly for supplies	$23,302	$34,686	$120,934	$357,671	$162,650
High	8,796	3,000	6,000	39,700	46,300
Low	97	195	290	1,801	1,280
Average	1,554	1,084	1,612	13,756	4,647
Number hospitals reporting	14	34	83	26	34
Cost of supplies per meal					
High	$.019	$.04	$.01	$.05	$.016
Low	.001	.001	.002	.001	.001
Average	.006	.009	.006	.006	.006
Number hospitals reporting	9	23	49	23	29
Total spent yearly for other operations	$18,036	$36,500	$66,967	$322,522	$103,170
High	3,700	6,700	5,200	15,756	11,300
Low	225	180	190	703	410
Average	2,254	1,520	1,633	2,148	5,158
Number hospitals reporting	8	24	40	15	20
Cost of other operations per meal					
High	$.019	$.01	$.013	$.019	$.02
Low	.003	.0002	.0002	.0005	.0002
Average	.013	.005	.005	.005	.002
Number hospitals reporting	3	16	36	10	18

Dental Caries and the American Indian

The dentists [Indian Dental Service] do most of their work with day and boarding school pupils of which there are about 100,000 in 900 schools scattered from Nome (Alaska) to Talihina (Oklahoma). The bulk of the work consists of examinations, extractions and amalgam fillings. There is considerable prevalence of low grade Vincent's gingivitis, severe flare-ups of which are often seen. Many of the Indians of the southwest live in fluoride water areas where mottling of the enamel is prevalent. Dental caries in the schools varies from 20–30% with some tribes to 60–66% with others. It is noted that the meat eating Navajo and Apache have the lower rates while the carbohydrate eating Hopi and Pueblo have the higher rates.—*Captain Raymond Mundt and 1st Lieut. Harvey E. McDowell, Indian Dental Service, The Military Surgeon, April, 1940.*

REORGANIZING THE DIETARY DEPARTMENT AT COOK COUNTY HOSPITAL[1]

MILLIE E. KALSEM

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COOK County Hospital is the largest public hospital for acute diseases. When I first came to the hospital in 1927, many of the then-existing procedures in the dietary department were due to lack of a unified dietary department, and lack of personnel, equipment, centralized authority and control, as well as a lack of understanding of the function of the dietary department in a hospital. With the cooperation of the director of the School of Nursing I was gradually able to increase the personnel so that the graduate dietetic staff had grown from three in 1927 to nineteen in 1937. Through the cooperation of the warden of the hospital much new equipment for the therapeutic division was also secured during this interim. In 1937 when Mr. A. C. Negri was appointed by the Board of Commissioners of Cook County to make a survey of Cook County Hospital upon which he could make recommendations for improvements, he found among other things that the hospital did not have a separately organized dietetic department. The food service was loosely subdivided into three departments with no clearly defined head accountable for the whole food service, a service which expends the largest single item in the appropriation for expenditure in the budget. Mr. Negri immediately recognized the need for the organization of a department which could assume full charge of the institution's entire food service, one whose chief executive would be held responsible for the standard of food service, including the personnel, equipment and supplies needed to operate adequately and efficiently.

Heretofore the dietary department had existed as a unit of the Cook County School of Nursing, but its responsibility had been confined to the preparation of food for special diets and the supervision of the service of these on the largest teaching medical wards. This department, immediately prior to the reorganization, was preparing food for approximately 1500 patients daily, and supervising the service of about 1000. It became the nucleus of the new department which was to be regarded as a separate unit in the hospital organization, one which ranked as an integral part of the coordinated whole. My first procedure, having accepted the responsibility, was to organize and classify my ideas, and study more in detail the existing procedures in the food service throughout the institution in order to combine the best of the old with new ideas for improvement.

Our first effort was directed toward a study of the dietary to determine any reinforcement necessary to make the general dietary standard adequate, and the establishment of a budget and food control needed for standardization. A few years earlier Dr. Bernard Fantus, director of therapeutics, had organized a therapeutic committee made up of repre-

[1] Presented at the annual meeting of the Illinois Dietetic Association, Drake Hotel, Chicago, February 10, 1940.

sentatives from the major divisions of the hospitals. As head of the dietary department I was invited to serve on the committee. Dr. Fantus was concerned not only with the care and treatment of patients, but with the administrative problems involved in securing such care. When it was brought to his attention that the general dietary as served appeared to be inadequate he asked me to make a detailed study of the dietary and to submit the report to the committee. The study when completed revealed a dietary inadequate in several respects. It also disclosed the fact that many physicians ordered special diets for patients merely to secure an adequate general diet under the supervision of the dietary department.

The study served as a basis for recommendations for changes in the dietary at the beginning of the reorganization period, and as an aid in planning a new dietary standard. A revised diet manual, including only the therapeutic division, was at that time ready for publication. It was therefore essential to reorganize this material and to bring it up to date by including the new standard for the general hospital dietary. This was carefully worked out with the assistance of the members of our dietary staff following standards set up by foremost authorities in nutrition, and then submitted for suggestions and approval before publication to Dr. Fantus, Dr. Frederic Tice, then chief of the medical staff, Dr. Karl Meyer, then medical superintendent, and Dr. C. J. McMullen, then chairman of dietetics appointed from the medical staff.

After the dietary standard was accepted and approved, the next step was to make it practically effective in the planning of meals. Simultaneously, a food control system was instituted by Mr. Negri which furnished information concerning the actual raw food cost essential to meet the accepted dietary standard. Our aim was to initiate a food control system by means of which the chief dietary executive could be informed of the cost expenditures at frequent and regular intervals. Our plan called for the standardization of all procedures in the department in order to have complete control of all units throughout. It was often difficult to know what unit should be standardized first, as there were so many problems to be worked out simultaneously to achieve a unified, coordinated whole.

One of the basic needs of the standardization program of serious import in every unit was the standardization of all recipes in order to secure uniform production at a standard cost in all kitchens. Intimately connected with this was the necessity for uniform standardized portions upon which accurate cost estimates could be made. A preliminary survey and study of available standardized recipes was made. Many valuable suggestions were derived from various sources, but none were found which seemed to fit our particular need. Here again Mr. Negri's file of recipes served as an excellent reference both as to content and form. With this background I developed a form flexible enough to be adapted to the needs of the varying production requirements of our many kitchens. Size of portions was also agreed upon after having made a survey of the amount desirable through the cooperation of the ward supervising dietitians whose judgment was an invaluable aid in establishing this standard satisfactorily.

Sizes of all portions were established in ounces, either measure or weight, or by count, whichever was the most practical and offered best control. With the portion standard decided, the recipe was then standardized in units of 50 and 100 portions, and other amounts necessary to serve the average number of patients in our various buildings. One item of information which I found lacking in so many recipes was the total weight yield of recipes standardized to yield 50 to 100 portions, an item of information which the head chef and I found absolutely essential as an efficiency measure. After completing the standardization, the cost of the recipe per 100 portions was calculated by the cost accountant. This information is typed on the back of all recipe cards as they go into the active file available for use as indicated by the menu. During the process of standardization of the recipes, each was tested and retested until the finished product met with the approval of the dietitians and chef as to quality and palatability, and the cost met with the approval of the cost accounting department.

The development of our standardized recipes was stimulating because of the keen interest manifested by the various dietitians and head chef. Our capable and experienced head chef contributed many excellent suggestions and was always most anxious and willing to retest a recipe to determine the value of the newest suggestion. The standardization of recipes of course is never ending, and we expect to continue adding many recipes to our file for greater variety in our menus. During the development of the recipes we kept in mind at all times the need for the best possible recipe that could be developed at the cost level consistent with our standard of food service as a public institution. All recipes were indexed so that they could easily be cataloged, used and re-used with the minimum of effort. When the standardized recipe file had reached a sufficiently large volume, it began to be possible to control more closely the uniformity and amount of food produced and thus check food waste resulting from overproduction.

As our standardization began to function in the production unit, we turned our attention to the service department and the coordination of the one with the other. The service division needed complete reorganization, including consolidation of the general hospital food service with the therapeutic division. Lack of equipment in these units was a handicap in some wards at first, though that has been corrected. The style of service now instituted permits food for patients on one ward to be served from one serving station, with the exception of quantitative diets which are served directly from a small serving kitchen. All between-meal nourishments are also served from this kitchen. Since our wards are so large it seemed most efficient to use a portable service station. This consists of an electrically heated food cart with a sufficiently large number of wells of varying sizes to permit the serving of all hot dishes. An accompanying tray cart, where partially set-up trays and cold foods are carried, completes the service station. As the dietitian calls for the various types of diets needed, specially trained personnel assemble each tray and carry these to the patient. To avoid errors, the dietitian checks each tray before it leaves the service station. The personnel are always instructed to de-

posit the tray before the patient in a position convenient for eating so as to avoid the possibility of food chilling before being consumed.

The ordering of staple grocery supplies for serving units, as well as the prepared food needed for each meal, was a responsibility assigned to the dietitian in charge of each unit. She has also been provided with a chart informing her of the size of standard portions, and other standard food allowances needed to coordinate her responsibility with the production unit and control of food in her unit of the department. A study of patients on her ward to acquaint herself with the probable number of second helpings or half portions needed is absolutely essential if she is to serve her patients adequately. This procedure eliminates food waste on the ward as far as possible, and has been emphasized repeatedly by those supervising the food service as of the greatest significance in the control of food cost. It is of prime importance if we are to serve an adequate diet at low cost, that all possibilities of food waste be reduced to a minimum.

In the consolidation of the service of therapeutic diets with the diets on the regular hospital dietary, it was necessary to develop a new daily menu form. In developing this, four previous forms were eliminated. The new form serves as a menu as well as an order sheet for prepared foods. An á la carte section includes the names of the necessary dishes on the menu for all therapeutic diets. These are coordinated as far as possible with the general menu and may vary only in the preparation, as for example, foods prepared without added salt. The diet manual provides an outline of allowances for all therapeutic diets, which are then planned for each patient by the ward dietitian according to dishes found on the menu, and coordinated with the specific need of each diet ordered. This plan also affords experience for the student of diet therapy, either student dietitian or nurse. It ensures more adequate diet therapy and furnishes another avenue of economy since the menu planner will be more familiar with the likes and dislikes of the patients, and thus be able to appease the whims actuated by illness.

All orders for food are received in the central office a day ahead to provide the production unit with the desired information. Changes in census affecting food needed are noted in the central office until 9 a.m. for the ensuing day.

All foods and supplies are purchased through a central purchasing department known as the Bureau of Public Service. Staple food items are purchased by contract. Perishable fruits and vegetables are purchased on the open market by an assistant buyer who works closely with the dietitian in each of the county institutions.

Requisitions are made in duplicate by all hospital departments and sent to a central store-room. All requests are consolidated there to form one requisition from the entire hospital to the Public Service Department.

In order to operate the food department adequately and efficiently, I found it necessary to develop market order forms for fresh fruits, vegetables, meat and fish; to summarize the amount of food required in each unit for a period of three to four days; and to show the quantity needed in each production unit. A biweekly series of conferences is scheduled routinely with the head of each production unit who in turn determines the amount of each item of food required for her unit according to a weekly menu

worksheet and standardized recipes. Consideration of the increase demanded by second servings is also noted for popular dishes, and the decrease noted for those not so popular.

The conference method provides a means of checking more closely on foodstuffs and schedules a definite time for short discussions with the head of each division in our department so that information with regard to new recipes—counts, changes, or new standards, etc.—or opportunity for instruction may be given to the personnel in each department. I can also avail myself of the opportunity to check reactions of patients to new items on the menu with each department head. Following these conferences a meeting is held with the head storekeeper to give him information with regard to staple grocery items which will be needed the following week for the menu as planned, thus reducing the need of substitutions which usually mean an increase in food costs.

With the series of conferences over, all food items are totaled. An inventory of store-room supplies is then made, and is taken into consideration in determining the amount of food to be requisitioned. Deliveries are made twice weekly so that perishable stock is never on hand longer than four days. All requests for purchase specify the date goods are to be delivered. All merchandise is delivered to a central store-room. Each unit then makes out a requisition for supplies which we call a distributing requisition. This must coincide with the original request on general purchase order for perishable merchandise, and if any deviation is found necessary, the dietitian in charge of the unit is instructed to consult my office with regard to changes, such as decreases or increases from the original order. Such changes, of course, materially affect our food costs.

Reports from the accounting department are made to the head of the dietary department every two or three days. All menus are priced before foods are ordered, and so adjusted that the anticipated price range will fall within the budget allowance.

One of the major responsibilities of the department in the reorganization program was to assume full control of all personnel concerned with the handling of food. Since the budget for 1937 was already in effect at the beginning of the reorganization period, this was not accomplished until 1938. This, however, afforded us the opportunity to make time studies, and to study the duties of all personnel so as to formulate a definite request with reference to employees needed to carry our program to completion. Therefore at the beginning of our fiscal year 1938 (December 1, 1937) for the first time we prepared a budget for the food department as a separate unit of the hospital budget. At that time all employees in the Nursing Department of the Cook County School of Nursing, as well as employees in the Housekeeping Department of the hospital who were employed in the handling of food, were transferred to the newly organized department, the personnel of which grew from about 40 to 226 overnight. This personnel, however, was not sufficient to supervise all units of the department adequately, partly because of the continued increase in the number of patients in the hospital, partly because nurses themselves had assumed some of the responsibility, but principally because the straight eight-hour day went into effect in our hospital that year, as required by Illinois law. In order to provide addi-

tional employees to inaugurate the standard of service necessary in our program, a request was made to WPA to furnish unskilled supplementary assistance to make possible the installation of our entire program. This project was approved in May 1938.

A provision for ten additional dietitians on the graduate dietary staff was also granted by the Cook County School of Nursing. Therefore in June 1938 an adequate staff was secured which provides sufficient workers and supervisors throughout the entire department. At this time the regular staff, with WPA assistance, totaled 296. Only minor changes have been made in personnel since then.

Members of the graduate dietetic staff are classified as follows: director or chief executive, assistant directors, head dietitians, teaching ward supervising dietitians, and ward supervising dietitians. The inexperienced dietitian begins as a ward supervising dietitian. As vacancies occur, promotions are made to a higher classification and are based upon experience gained and demonstrated ability to assume increased responsibility. Assistant directors are placed in charge of each of the major divisions in the department, namely: (1) Administration, Food Production; (2) Administration, Service Division; (3) Education; (4) Nutrition Clinic. Each of these in itself is a separately functioning unit.

In regard to time schedules, all employees are given whole days off duty, rather than half days. This requires four additional dietitians to furnish relief for all classifications on the graduate staff.

Each dietitian is provided with an outline of her specific responsibilities. As we assumed the responsibility of the entire personnel in the service of food, I met with each individual group of non-professional employees in their own unit. At that time every employee had received a detailed outline of his responsibility, with his duties outlined for every half-hour during his eight-hour working day. Time does not permit a discussion of our non-professional employee schedules and instructions. Let me say, however, that in my experience most employee problems can be eliminated or at least vastly reduced by specific and definite instructions so that each employee understands perfectly his contribution toward the efficient operation of the entire department. He then becomes interested in maintaining standards of service as well as his own self-respect. The promotion of the feeling that each member is an indispensable unit in the department is one of the greatest factors in developing interest, loyalty, and support from each, all of which ensures continued progress, efficiency, and good will in the department.

As an indication of the efficiency of our present procedures, I am permitted to quote Mr. Negri as saying that in the Oak Forest Infirmary where approximately 3800 to 4200 people are cared for, procedures similar to some of those recommended for the County Hospital were installed in 1938 and 1939. The dietetic staff there now consists of the chief executive dietitian, first assistant, a clerk for the office, and five assistant dietitians. To further progress in unifying the food departments of the various county institutions, Mr. Negri is now organizing a food council, of which I have been asked to assume the chairmanship, consisting of the chief executive dietitians of these institutions, together with the assistant buyer of the Bureau of Public Service.

FUNDAMENTALS IN THE DESIGN OF FOOD SERVICE EQUIPMENT

OWEN T. WEBBER

THE value of any food service layout lies in the extent of its contribution to efficient food preparation and service, and is dependent upon several governing factors as follows: first, the arrangement of the various departments in proper sequence, so that they support each other and render the traffic routing as direct as possible, eliminating unnecessary footsteps; second, the coordination of these departments under proper control and in such a manner that the personnel required is not top-heavy; and third, the design of the equipment itself and the extent to which the various basic units have included labor-saving features and stabilizers in their construction—that is to say, devices eliminating the irregularities of human operation. In view of the restrictive length of this discussion, remarks will be confined to this last named group.

It is becoming customary to convey quantities of foods to and from the counter in some form of conveyance, and this has resulted in the development of a small tray type truck in which two stainless steel shelves with slightly turned up edges are placed one above the other in a metal framework and mounted on ball-bearing, rubber-tired wheels. One or two of these trucks can then be parked underneath the service counter top in convenient positions. They are useful in bringing the food to the counter and holding additional quantities, and they are in a convenient place ready for unloading the counter after a meal is over. The parking space required for these little tray trucks is arranged by designing the framing of the counter with the proper under clearance.

We recognize today the fluctuation of any volume between the hot and cold food sections during the seasonal ranges of the year from spring to winter, and in accommodating the changes in menu which take place according to each respective meal it is sometimes difficult to provide equipment adaptive enough to permit one to go to the desired extent in change. For this reason the steam table, for instance, should be designed in sections, so that one or more sections can be shut down when not needed or a section changed from steam table operation to cold pan operation. This merely means that the metal work employed in the fabrication of the steam table should be of 18/8 stainless steel and the steam table well or pan insulated. Those sections of the steam table which are likely to be swung over to service for cold foods should be provided with auxiliary refrigeration coils adequately contacted to the back side of the well. These coils would be of approximately $\frac{5}{8}$″ diameter dehydrated copper metallically secured and hooked up to a small unit compressor conveniently located nearby or to circulating brine coils from your central refrigeration system. The pan itself would actuate from the inside with a steam coil or a submerged type electrical heating element in which the element would be placed in the small sump set down below the bottom of the pan proper, as shown in the illustration. In each instance one or the other of these

agencies providing or removing B.T.U. heat value, could be employed at an instant's notice at the wish of the operator. For instance, a steam table 11′0″ long would logically consist of nine 12″ x 20″ top panels, permitting the table to be divided into three sections of three panels each. Each of these sections would resemble a plain bain-marie and the top of each would be of a size to accommodate three stainless steel collars, each 14½″ wide x 22½″ long from front to back. There would be a plurality of these collars, some of which would accommodate 12″ x 20″ insets; others, two half-size entrée pans or two or three round vegetable containers. Still other collars, without any cutouts in the top, could appear as a solid panel and when placed in position would fill up any portion of the steam table and make a smooth flat surface area.

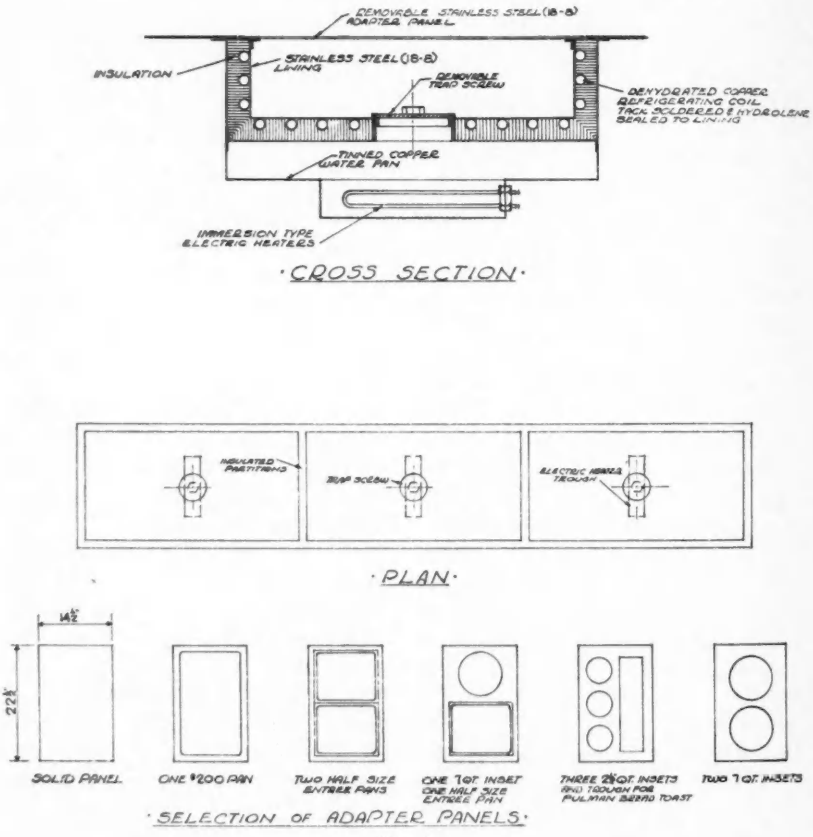


FIG. 1

In addition to the foregoing, it is desirable to design the actual cold pans in

any counter so that they can be changed in size and capacity to meet changing needs. For example, in the melon season it may be necessary or advantageous to have a cold pan which has great depth from front to back but in all other seasons of the year such a depth would not be necessary. Therefore it is quite reasonable to provide a back top section to the pan, which when in service is a prolongation of the top area proper and when taken out merely adds to the capacity of the cold pan in its depth from front to back. Realizing, for instance, the use of a cold pan for the service of cold beverages, fruit juices and milk, the quantities of these items would vary according to the season of the year.

It is desirable, therefore, to arrange the cooling agent in a manner permitting maximum efficiency and leaving the well of the pan free for storage usage as needed. Cold pans would therefore be cooled by means of these metallically contacted copper coils. The pan is insulated and then sheathed on the outside in suitable manner. Such an arrangement would concentrate the refrigeration effectiveness entirely on the inside of the pan, and separating the side walls of the pan from the turndown of the counter top opening by means of a bakelite breaker strip would prevent frosting or sweating of the counter top near the cold pan section. It is evident that the service of milk, for instance, is progressing from bottles to cartons and these last can be arranged with great economy of space, due to their rectangular shape, in the section of the pan somewhat near the beverage service. This section of the pan should carry on down deep enough to provide three or four rows of stacked milk cartons. For institutions where a tremendous amount of milk is consumed, the "Lowerator" aids in the service of cartons of milk. The cartons are placed in wire protectrays and the filled trays loaded from the top of the well until the full or desired capacity has been obtained. The well could be sheathed with stainless steel and insulated and provided with a refrigeration coil to maintain the desirable low temperature. As the milk cartons are removed from the top and each protectray emptied, another rises to take its place until the entire capacity has automatically been elevated to a convenient level for disposing. This is a distinct departure from the original fixed cold pan for milk service and provides ease of loading and speed in service.

Display shelves usually consist of a series of vertical tubes with horizontal connecting members to support one or more plate glass shelves. The pipe framework is inconvenient in that it is very much in the way and quite a problem to keep clean, but these shelves can be very simply arranged if supported on cantilever brackets attached to vertical pipe members in the rear only. These pipe members, being anchored to the substructure of the counter by means of internal pipe members, leave the main service reaches free and clear of any pipe members, and, finally, the display in its unbroken state is more pleasing. In cafeteria counters it is desirable to place the silver dispensing equipment at the end of the counter near the coffee service on the assumption that by the time the coffee order is received one would know how much silverware is required. A recent aid to hygiene and individual service is the contribution

of the Lowerator Company. A series of cast aluminum silverware cartridges (which can be chrome-plated to merge harmoniously with the color of stainless steel) is built to specifications and quantities, and permits taking stacks of the various types of tableware, each piece of which is available one at a time. In this manner the available tableware is not indiscriminately handled by everyone and anyone.

It is essential that the desirable depth of the warmers and shelves under any counter be carefully determined. Many counters are 30″ in width and some still wider, in which case a shelf under the rear section of the counter, of similar depth, would not be of any use. For this reason normal shelving under the counter should be restricted to a depth of 18″ by means of a supplementary partition, thus permitting storage with a maximally useful reach. For a steam table, 20″ in depth would provide for two stacks of 10″ plates, possibly more than would be required in most cases. Many people therefore feel that the warmer under the steam table should be made shallow in depth from front to back to take merely one stack of china. If we consider the dinner plate to be the maximum unit to be accommodated, it would mean that this unit need not be more than 12″ in depth from front to back.

The serving speed at a counter is expedited when people are able to make up their minds quickly because they know where to find what they want and can determine the cost with ease. Various types of menu boards are available with a magnetic type background to which the letters of the alphabet are affixed by little metal clips. The letters are thus magnetically held in the desired position on the board. Such equipment has great possibilities and units of any size can be rearranged very quickly.

In the handling of dishes, it is desirable, as far as possible, to arrange for their accommodation in quantities and their transportation from one point to another in containers of standardized sizes. For example, glasses can be made available at the service counter, drinking fountain or in the pantry service, arranged in welded wire protectrays which are issued automatically from a "Lowerator" rectangular well in which the chassis is equipped with a self-levelling platform and an arrangement of sprockets and calibrated springs which maneuver these protectrays with a great degree of exactitude. Under these circumstances, it can be seen that the soiled glasses will be carried to the glass washing department in these protectrays, put into the machine and brought back in the same protectrays to the points of service once again. In this manner they are handled in bulk easily and economically and with the least likelihood of damage.

The same theory would apply to cups which are placed in service adjacent to the urns and issued in protectrays from "Lowerator" wells of a similar type to those used for the glasses previously mentioned. Adjacent to the chassis for the cups, two or more circular wells could be arranged to take stacks of saucers and deliver these automatically. Similar wells can be included in the steam table, where the various size plates and under-liners can be discharged at convenient points. Stacks of cafeteria trays have always presented a rather unsightly feature at the beginning of the counter where tiers of trays are

stacked prior to serving the meal. A "Lowerator" well is also available which will accommodate these trays. A chassis is constructed in which a central platform suspended on four chains with a series of sprockets and calibrated springs carries a stack of cafeteria trays. The trays are loaded in from the top, the platform sinks gradually as the load increases, until in full capacity the chasis platform is near the bottom of the counter. As one takes a tray from the stack, the entire group moves up and compensates to the level of the item removed, so that the reserve of trays is always hidden below counter height. Not only is such an arrangement more speedy and convenient, but the appearance of the service unit is enhanced. All of these wells, as mentioned, can be either refrigerated or heated, as required, by the inclusion of electric dry heat elements or steam coils, or refrigeration coils operated from a small compressor. In such instances the housing of the chassis could be insulated to permit economy in control of temperature. The urns and steam table can and should be equipped with thermostats to control the operating temperature.

Electrically operated roll warmers, for example of the Griswold type, are a feature which can be advantageously incorporated with either the pantry serving counter or the cafeteria counter. These units are usually arranged in groups of two drawers, one above the other and set in a housing, and can be arranged with either drop front drawers or plain front drawers. If installed under the steam table, one of these twin drawer units with drop fronts is very handy for storage purposes under proper conditions which include loaded 12″ x 20″ reserve pans for the steam table. The inclusion of a second unit underneath the hot bread section provides immediate replenishment of rolls in proper condition.

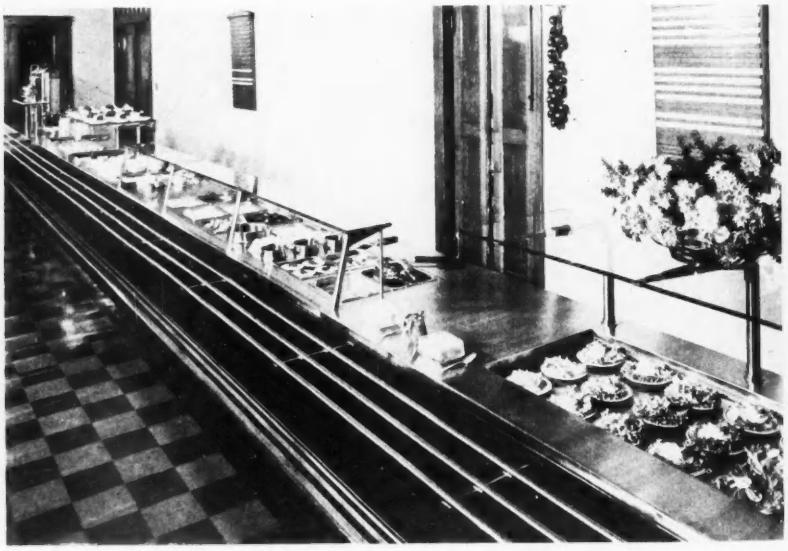
Equipment exposed to public view should be studied as to its appearance and appeal, as well as its planned efficiency. It should be stylized. In this respect, one should realize that different metals vary in color. For example, all fixtures necessarily include various fitments in their assembly quite often of white metal or a nickel plated base metal. Counter tops and trim usually are made of 18/8 stainless steel in contrast to which white metal or nickel plated items evidence a distinctly yellowish cast. Insistence on the part of the buyer will reveal that display shelf fitments, steam table protector brackets, urn shells, etc., can all be furnished in stainless steel and any small parts special to the job design can at least be chromium plated. Under such provision, harmony of metal color obtains.

Consideration should also be given to limits of application of any one material. Granted the estimable qualities of noncorrosive 18/8 stainless steel and its good appearance, nevertheless it is not always advisable to specify it throughout a counter. The introduction of a counter facing of some other material free from the proverbial vertical panelling strips often affords relief and lends pleasing contrast. Today there are so many materials available at reasonable cost. Bakelite impregnated wood panels, where rare woods are used in veneer form and processed in the surface of a bakelite sheet which brings out the

beauty of figured grain and color, provide a wearable, easily cleaned surface which under normal usage precludes the possibility of blistering, checking or cracking.

The illustration shows a counter recently installed in one of our large eastern universities, which not only embodies most of the modern devices as previously outlined but has a flush facing base and facing is enhanced by inserting flush with the Formica a series of metal inlay strips, graduated in width, and successively diminishing in size. This motive carries up the front to a distance equal to one-fourth of the height, leaving a fair proportion of the block color area undisturbed.

Scant attention has been paid to food service equipment in its relation to noise



Photograph by Courtesy S. Blickman, Inc.

A Serving Counter in a Large Eastern University

of good appearance. The counter substructure extends to the floor with recessed toe space in the rear. A moulded stainless base in front supports a flush Formica facing of deep oriental red softened by a secondary process of vulcanizing over the colored base an overlay of clear Formica in which a photographic interpretation of the weave of black linen fabric is introduced. The continuity or decorative merging of metal

prevention. All metal tables, more especially dish tables, are in reality, and unwittingly, sounding boards which augment the clatter of dish impact and build up a substantial volume of noise. The application of a $\frac{3}{16}''$ thick coat of Tanco to the underside of the table and the insertion of a rubber disc in a recess fashioned in the bottom of each foot, cushions the table from the floor and reduces clatter very appreciably. The

insulation of warmers, steam table pans, etc., not only minimizes unnecessary heat radiation but effectively blankets the metal and reduces operating clatter.

An evident truth concerning food service equipment purchases which many have not realized as yet, lies in the fact that everyone is required to expend approximately the same amount per unit for the most ordinary quality. Every dollar spent over and above this basic minimum with a capable firm, provides refinements and features which contribute a value far in excess of the proportional increase in the equipment cost. The reason is simple. For instance if we consider the service counter illustrated, under any quality specification the size remains the same and the labor in framing and laying out does not appreciably vary. As an increase over basic elementary quality, one can consider a #14 gauge stainless top instead of #16 gauge, or an open bain marie type steam table as previously described instead of the standard. The "Lowerators" mentioned are desirable but not vital features. The urns can be of chrome plated copper instead of stainless steel. The inclusion of thermostats is not compulsory, merely sensible; and the decorative counter features described are not mandatory, merely a wise provision. All of these items as enumerated cost specific sums in excess of the cheapest specification, but their value and contribution to the efficient operation of the counter and its appeal is far greater than the proportionate increase in the cost of the equipment for each of these respective features.

Buy wisely and considerately, not expecting something for nothing, or heeding those who would have you believe it possible. In specifying each piece of equipment, consider the specific factors which should govern each choice, and also realize at what stage sensible investment ceases and extravagance begins.

Nutrition in Time of War

DURING THE LAST WAR knowledge of nutrition was acquired which has proved of value in dealing with questions of the nation's food supply in conditions of restriction. It is vital that this knowledge be applied now if similar conditions recur. In the meantime, however, the facts have become more widely known and the importance of qualitative as well as quantitative rationing is generally realized. The special need for milk and other protective foods is an example. Scientific guidance is essential in all measures affecting the food supply of the armed forces and the population at large, if the best results are to be obtained. Great use is now made of canned foods in service rations, which raises the question of destruction of vitamins in the process. This and other points in army rations are now being investigated. So also are methods for the preservation of food during transportation and storage.—*Foreign Letters, London, J.A.M.A., 114: 1384, 1940.*

VITAMIN C RETENTION AS A CRITERION OF QUALITY AND NUTRITIVE VALUE IN VEGETABLES[1]

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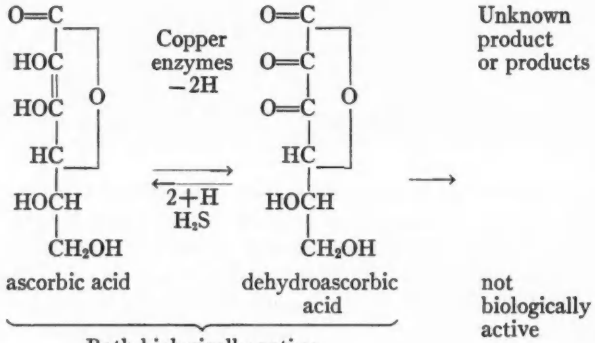
IN ORDER for the busy person to be able to use the many isolated findings reported in the literature on losses of nutritive value from vegetables, it is necessary to reduce these findings to some general basis.

Vitamin C may be used as this general basis because it can well be taken as a criterion of quality in vegetables. If it is retained, all other attributes known as quality, that is, aroma, color, flavor, texture and nutrients, will also be retained. Of all the vitamins, vitamin C is most easily destroyed, and no other vitamin or mineral is dissolved from vegetables more easily.

The destruction of vitamin C by oxidation is catalyzed by copper and by enzymes.



The first catalyst is not very important in this country where vegetables are not cooked in copper utensils nor copper added to them. In European countries, copper has been commonly added to green vegetables in canning in order to give a permanent green color. A German laboratory (1) reports that increasing the greenness of canned peas and spinach with copper led to a wide destruction of vitamin C. A Norwegian worker (2) found that the addition of copper to canned spinach increased the destruction of vitamin C from a range of 15 to 50 per cent, to 60 to 95 per cent. A German worker (3) reports that canned peas and beans to which copper had been added, retained but two-thirds of the vitamin C content of the uncolored peas and beans and that canned spinach thus colored lost 90 per cent of its vitamin C.

The enzyme which catalyzes the oxidation of vitamin C is of extreme importance, because it is present in practically all vegetables tested. It seems to be more active or is present in larger amounts, however, in some vege-

[1] Presented before the Rochester Dietetic Association, Rochester, New York, November 13, 1939.

TABLE 1

Loss of vitamin C during the standing of fresh vegetables

VEGETABLE	METHOD OF STORAGE		DESTRUCTION OF VITAMIN C	REFERENCE
	Temperature	Time		
	°C		%	
Beans, Snap Refugee*	21–23	1 day	46	(9)
		6 days	48	
	1–3	1 day	3	
		6 days	42	
Beans, Lima, Burpee:				
Unshelled	22	3 days	19	(6)
		7 "	56	
	0	3 "	14	
		7 "	25	
Shelled	0	3 "	24	
		7 "	43	
Cabbage, Glory, whole heads	22–24	19 days	22	(7)
	8–9	19 "	19	
	1–3	19 "	3	
Carrots	Cool cellar	4 months	0	(8)
Cauliflower	5	15 days	0	(29)
Corn, Sweet, Golden Bantam in husks	18–27	1 day	7	(31)
		2 days	14	
	4.4	1 day	14	
	In refrigerator	2 days	30	
Peas, Alderman	22–23	1 day	15	(43)
		3 days	30	
	0–2	1 day	0	
		3 days	1	
	Shipping	24–48 hours	49	(41)
Potatoes:				
Netted Gem	Warm, dry cellar 55–60°	6 months	0	(44)
	Cool, damp cellar 37–46°	6 "	0–33	
Bliss Triumph	Warm, dry cellar 55–60°	6 "	20	
	Cool, damp cellar 37–46°	6 "	33–50	
	"Ordinary home conditions"	5 "	50	(12)
Spinach, Prickly Winter**	23–26	3 days	44	(4)
		7 "	0.06	
	1–3	3 "	3	
		7 "	8	
	5	1 day	19	(29)

* Similar results were found for Kentucky Wonder variety.

** Similar results were found for Hollandia variety.

tables than in others; it is apparently not so active in the acid as in the non-acid vegetables.

Standing of fresh vegetables: Vitamin C is present in the reduced form in growing plants but it undergoes oxidation very readily to the dehydro-form and then to products not biologically active. For instance, spinach (4) lost half of its vitamin C in three days when held at room temperature, and nearly all of it in a week; that stored at 1° to 3°C. lost very little during the same periods. The amount of surface exposed is also a factor. Shelled Lima beans (6) lost vitamin C at twice the rate of the unshelled beans; whole heads of cabbage (7) lost vitamin C slowly during storage; carrots (8) lost no vitamin C during four months of winter storage; snap beans (9) lost vitamin C more rapidly than other vegetables. In every case the rate of destruction was higher at room temperature than under refrigeration. This is true also of other factors which make for quality: that is, aroma, color, flavor, particularly sweetness, and texture. It has been reported that the crude fiber content of peas (10) increases upon standing and that the greatest increase is during the first twenty-four hours. This means a tougher vegetable which requires longer cooking. Conditions at room temperature are very favorable for volatilization, evaporation, respiration, oxidation and enzymic actions.

Parts of the vegetable: The leaves of spinach (4) and chard (11) have a much higher vitamin C content than do the stems. The seeds of string beans (9) are higher in vitamin C than the pods. The skins of raw potatoes contain no vitamin C (12).

Preparation for cooking: Crushing, grinding and bruising of raw vegetables all increase the activity of the ascorbic acid oxidizing enzyme. They may also increase other destructive activity. If vegetables must be sliced, the slicing should be done with a very sharp knife and just before the vegetables are put on to cook.

Cooking: While the ascorbic acid oxidizing enzyme is merely inactivated at low storage temperatures, it is actually killed by boiling for one minute when in vegetable extracts (13), and apparently by boiling for slightly longer periods when it is in plant tissue. Most of the destruction of vitamin C in peas (14), Swiss chard (11), carrots (15), and cabbage (7) occurred during the first two minutes of cooking; that is, while the ascorbic acid oxidizing enzyme was still active.

It is important that the enzyme be inactivated as quickly as possible after the vegetable is put on to cook. This means that if the vegetable is to be boiled it should be plunged into boiling water and the water brought back to the boil as quickly as possible. If it is to be steamed it should be placed directly into an atmosphere of steam.

As noted in table 2, the amount of vitamin C actually destroyed in the cooking of vegetables is amazingly small: from 2 to 32 per cent in most cases. The largest destruction reported occurred in potatoes, a vegetable for which reports have varied greatly. Data on the effect of boiling on the vitamin C content of potatoes vary as follows: a loss of 1 to 20 per cent for potatoes boiled in the skin (18); a loss of 40 per cent (12) for potatoes boiled in the skin; a gain of 26 per cent (16) for potatoes boiled after being peeled and cut in two parts.

TABLE 2

Changes in vitamin C content of vegetables during cooking

VEGETABLE	TREATMENT		VITAMIN C			REFERENCE
			Retained		De-stroyed	
	Method	Time	Solid	Liquid		
		Minutes	%	%	%	
Asparagus	Boiled: cut in 1½ in. lengths	15	30			(39)
Beans, Snap:						
Refugee*	Boiled	17	62	26	12	(9)
Burpee, Stringless	"	45	60–70			(36)
Stringless	"		23	39	38	(20)
Beans, Lima	Blanching	2½	52			(6)
Broccoli	Boiled		70			(40)
Cabbage:						
Glory	Boiled: cut in ¾ in. squares	8	60	27	13	(7)
		14	31	44	25	
Glory	Boiled:					
	quarters	18	38	56	16	(28)
	strips	12	32	53	15	
	finely shredded	10	22	66	12	
	Steamed:					
	quarters	25	58	22	10	
	finely shredded	14	24	50	26	
	Panned:					
	finely shredded	20	66	0	31	
	Boiled with much water		50			(18)
	Conservatively cooked**		88			
	Steamed		50–75			
	Boiled	30–40	60			
	"	30–40	86		14	(38)
	"	60–120	0			
	"	60–120	83		17	
	Conservatively cooked		70			
Carrots, Chantenay	Boiled	15	56	33	11	(15)
	Steamed	20	86		14	
Cauliflower	Boiled	30–40	27			(38)
	"	30–40	111			
	Conservatively cooked		79			
	Fried in ghee		67			(29)

TABLE 2—*Continued*

VEGETABLE	TREATMENT		VITAMIN C			REFERENCE
			Retained		Destroyed	
	Method	Time	Solid	Liquid		
		Minutes	%	%	%	
Chard, Swiss Fordhook†	Boiled	10	40	45	15	(11)
Corn, sweet, Golden Bantam	Corn on cob, boiled	12	93		7	(31)
Onions	Boiled		58	24	18	(20)
Peas, Thomas Laxton‡	Boiled	15	42	48	10	(14)
	"		58			(40)
	"		31	23	46	(20)
	"	11–15	79			(41)
Potatoes	Boiled in skins		60			(12)
	" sliced		51			
	Baked		60			
Bliss Triumph	Boiled, ½-inch cubes	15–18	Very little			(17)
	Boiled, peeled	65				(25)
	Boiled in skins	30–40	80–99			(18)
	Steamed in skins		85		15	
	" peeled		75–80		20–25	
	Oiled and baked		55–80		20–45	
	Fried		55–80		20–45	
	Roasted		55–80		20–45	
Netted Gem	Boiled, cut in two parts	35	100		0	(16)
	Steamed (same)	45	110		+10	
	Pressure cooked (same)	12	88		12	
	Oiled and baked	60	98		2	
	American fried (previously boiled)	10	49		51	
	German fried	20	67		33	
Bliss Triumph	Boiled, cut in two parts	35	126		+26	(16)
	Steamed (same)	45	150		+50	
	Pressure cooked (same)	12	98		2	
	Oiled and baked	60	141		+41	
	American fried	10	49		51	
	German fried	20	81		19	

TABLE 2—*Concluded*

VEGETABLE	TREATMENT		VITAMIN C			REFERENCE
			Retained		Destroyed	
	Method	Time	Solid	Liquid		
		Minutes	%	%	%	
	Boiled, peeled		62–71			(42)
	Steamed, "		70–76		24–30	
	" unpeeled	20	83		17	
	" "		77–88		12–23	
Spinach	Boiled		35–67	10–30		(5)
	Steamed		78	10	12	
	Boiled		72			(40)
	Boiled	30–40	38			(38)
	"	30–40	62		38	
	Boiled	2	83			(29)
Sprouts, Brussels	Boiled	15	54			(25)
	Steamed	15	71			

* Similar results were obtained with Kentucky Wonder variety.

** Conservative vegetable cookery consists in cooking the material with a little added water or fat, very slowly, in a covered vessel either in a slow oven or directly over a low flame.

† Similar results were obtained with Lucullus variety.

‡ Similar results were found for Alderman variety.

Data on the effect of baking on the vitamin C content of potatoes vary as follows: a loss of 2 per cent (16); a loss of 20 to 45 per cent (18); a loss of 40 per cent (12); and a gain of 41 per cent (16).

Three explanations for what appears to be a gain during cooking in the ascorbic acid content of potatoes and a few other vegetables have been given as follows: (a) the ascorbic acid is present in the form of an ester which is hydrolyzed during the cooking (19); (b) the ascorbic acid may be more easily extracted from the softened cooked vegetable than from the raw (20); (c) the inactivation of the enzyme (13) in the cooked vegetable results in a higher value than for the raw, in which the enzyme remained active throughout the extracting process. The activity of the enzyme can be decreased by a sufficiently low *p*H. However, it has been found that raw chard, even though it was extracted in sufficiently acid medium, contained considerable dehydroascorbic acid. This was probably formed during the necessary cutting of the leaves previous to grinding.

The enzyme theory is probably the correct one. For instance, the more recent studies in which cumulative knowledge has made it possible to take greater precautions in extraction have reported a loss of vitamin C from potatoes, cabbage, carrots, string beans, and peas, during various methods of cooking.

The addition of soda to the water in

which vegetables are cooked, to intensify the green color, will destroy more of the vitamin C, but no recent quantitative data on the destructive effect have been published. The addition of soda has been found to be very destructive to the vitamin B_1 of pinto beans.

Two laboratories (21, 22) found that the addition of salt to the cooking water helps to retain vitamin C. The vitamin C content of the cooking water was not given, so it is not known whether the salt retarded oxidation or solution or both. Two laboratories (22, 23) report that the addition of a little sugar to a pure solution of ascorbic acid helps to retain vitamin C.

The greater loss during the cooking of vegetables is due to solution of the vitamin in the water. This amount varies from 20 to 66 per cent. The largest loss was from finely shredded cabbage, and one of the least, 22 per cent, from cabbage which had been quartered (28). The extent of such dissolving depends on the amount of cut surface, the amount of cooking water, the length of time it takes for the water to return to the boiling point and the length of the cooking period, as well as the nature of the vegetable itself.

Certainly the knowledge that the cooking water may contain over half of the vitamin C content of a vegetable should challenge our resourcefulness so that the water may be utilized. If the cooking water contains a large percentage of the vitamin it will also contain some of the other water-soluble vitamins, B_1, B_2 and nicotinic acid, as well as considerable of the minerals. As much as 50 per cent of the vitamin B_1 of spinach (24) has been reported in the cooking water and as much as 50 per cent of the calcium, phosphorus and iron of various vegetables. In other words, if the vitamin C has been retained in the vegetable during boiling, so also have the other *soluble* nutrients.

Since so much of the vitamin C may be dissolved in the cooking water, the question naturally arises: would more vitamin C be retained if the vegetables were cooked in a very small amount of water? More work needs to be done on this subject. It is probable that with a smaller amount of water there would be less vitamin C in solution.

In steaming, more of the vitamin C is likely to be actually destroyed than in boiling, because steaming is a slower method of heating a vegetable through. This would allow a longer time for the ascorbic acid oxidizing enzyme to act. The amount of destruction of vitamin C in steaming will depend greatly on the size and density of the pieces of vegetable. If the vegetable is such that the heat penetrates quickly, the destruction will be less. More of the vitamin C is retained in the vegetable itself, for very little loss by solution is possible. Steamed, sliced carrots (15) retained 85 per cent of their vitamin C; boiled carrots, 56 per cent; and the cooking water, 33 per cent, or a total retention of 91 per cent for the boiled vegetable and its cooking water. Steamed spinach (5) retained 78 per cent, with 10 per cent in the water; boiled spinach retained 33 to 67 per cent with 10 to 30 per cent in the cooking water. If one assumes that the larger retention occurs with the smaller solution, this would mean a total retention in the spinach and cooking water of 63 to 77 per cent. Steamed, unpeeled potatoes (18) retained 85 per cent, and boiled,

unpeeled potatoes, 80 to 99 per cent of their vitamin C. Potatoes steamed in their jackets retained more vitamin C than did those steamed after peeling (18). Steamed Brussels sprouts (25) retained 71 per cent; boiled Brussels sprouts, 54 per cent of their vitamin C. The cooking water in this study was not analyzed. If the vegetable alone is to be eaten and the cooking water discarded, steaming is the better method for vitamin C retention. Steaming is also a better method for the retention of the other water-soluble nutrients, *i.e.* minerals, other water-soluble vitamins, sugar and starch.

Stewing is a long, slow method and consequently very destructive of vitamin C. Outbreaks of scurvy have been reported in institutions (26) on diets containing amounts and kinds of vegetables which would appear to furnish more than an adequate amount of vitamin C. It was found, however, that these vegetables had been incorporated in meat stews cooked in large amounts and for as long a period as 5 hours. In making vegetable-meat stews or soups, each vegetable should be added at such a time that it will not be overcooked.

Baking is also a slow method of cooking. Baked apples lost 66 per cent and boiled apples only 33 per cent of their vitamin C (27). Potatoes baked in the skins lost 20 to 45 per cent and boiled unpeeled potatoes only 1 to 20 per cent of their vitamin C (18).

Cauliflower fried in ghee retained 67 per cent of its vitamin C (29). In one study (30) it was concluded that baking and frying are more destructive to the vitamin C content of a great variety of vegetables than is boiling. The amount of time the vegetable is exposed to atmospheric oxygen before it is coated with fat and the time elapsing before it is heated through are factors in the degree of destruction of vitamin C. The high temperatures reached in frying might also be more destructive.

In a recent report (12), potatoes lost 40 per cent of their vitamin C whether baked or boiled in the skins. More information is needed on the destruction of vitamin C during the baking of the various vegetables which lend themselves to this method of cooking. Since there is no chance of any of the nutrients dissolving out, baking is the best method for the retention of the minerals, protein, carbohydrates and those vitamins which are more readily affected by solution than by heat. It may be that baking will present the one exception to the rule that if vitamin C is retained, all other nutrients will be also.

Few reports were found in the literature on losses during the cooking of vegetables in the pressure cooker, possibly because many vegetables do not lend themselves well to this method of cooking and many households do not own a pressure cooker.

Standing of cooked vegetables: Keeping cooked vegetables warm has been found to result in large losses (25). Also, allowing vegetables to stand either at room temperature or in the refrigerator results in marked decreases in the vitamin C of most vegetables (7, 12, 18). Cooking in large quantities and holding vegetables warm are problems for the institution worker, although they need not be for the housewife. The occasional hotel and restaurant practice of removing vegetables from the heat before they are quite done and holding

them in the refrigerator until ordered, then heating them quickly in small amounts as ordered, is, no doubt, more conducive to the retention of vitamin C and other attributes of quality than the practice of keeping large amounts warm during the entire serving period.

Freezing: Freezing alone causes no loss in the vitamin C content of vegetables (6, 14, 31), but blanching, subsequent cooling and other processes in preparing vegetables for freezing cause some loss. This loss varies from almost nothing in the case of sweet corn (31) to about 30 to 35 per cent (6, 14) in Lima beans and peas, and 45 per cent in spinach (5). Unless the frozen vegetables are stored at very low temperatures, about −40° F., the vitamin C is slowly lost. A recent report (32) advises a maximum storage temperature of −18° F. One worker (46) reports that "preliminary investigations indicate that, in general, the conditions which conserve vitamin C in frozen vegetables also conserve carotene, the precursor of vitamin A. A normal or high vitamin C content is good evidence that the vegetable was not overmature at time of harvest and that the vegetable was properly handled during the blanching and other operations preparatory to freezing and further that the frozen product has been stored at a sufficiently low temperature, viz. 0° F. or lower."

Cooking frozen vegetables: Cooked frozen peas contained about the same amount of vitamin C as cooked fresh peas (45). This may be explained, at least partially, by the fact that the frozen peas required only half as much cooking as the fresh, and the ascorbic acid oxidizing enzyme had been inactivated during blanching previous to freezing. A similar finding resulted from the cooking of fresh and frozen spinach (5). Both the peas and spinach were cooked immediately after they were gathered from the garden. A greater loss from the fresh vegetables would occur if they were purchased on the open market after they had stood possibly several hours or days.

Canning: Canned vegetables, like frozen ones, may, upon reaching the table, be better sources of vitamin C than cooked fresh vegetables, for in both canning and freezing only vegetables of good quality are used. They are picked at optimal maturity and are canned or frozen immediately after picking. Both are subject to blanching, which in most cases destroys the ascorbic acid oxidizing enzyme. The exhausting of air from the cans before sealing also prevents some loss of vitamin C.

The destruction of vitamin C in canned goods, as reported in the literature, varies from nothing to 100 per cent, depending on the kind of vegetable and other factors. As is to be expected, the destruction is much less in acid than in non-acid vegetables. The use of alkali, as in the lye process of hulling sweet corn, is destructive to vitamin C (31).

Recently, investigators have reported (33) that there was no destruction of vitamin C in tomatoes during home canning, by either the cold or hot pack method. These workers took advantage of a previous finding that the amount of destruction of vitamin C runs parallel with the amount of head space left in the can (34). They used glass jars, although several workers (3, 33) have reported that there is less destruction

of vitamin C in vegetables canned in tin than in glass. Theories set forth for this finding are that (a) the tin reduces any dehydroascorbic acid to ascorbic acid; (b) some alkali may be present in the glass; (c) heat does not penetrate glass as readily as it penetrates tin; (d) the air has been exhausted from tin cans and not from glass jars.

As mentioned earlier, the addition of copper in canning green vegetables is very destructive to vitamin C.

Because of its great solubility, reports of the vitamin C content of canned vegetables should be based on both the solid and the liquid contents. Because of the high temperatures necessary for the processing of the non-acid vegetables, the plant tissue is frequently broken down sufficiently to give a greater outpouring of the cell contents. One laboratory (36) reports the liquid of canned green string beans to be as potent in vitamin C as the solid portion.

In one of the too rare studies (5) in which samples of the same lot of vegetables were used for determining losses in cooking, canning and freezing, it was found that the losses from spinach were as follows: in boiled spinach, 33 to 67 per cent, depending on the amount of cooking water; in frozen spinach, 45 per cent; in canned spinach, 60 to 65 per cent. The same laboratory reports losses of vitamin C from sweet corn (31) as follows: in boiled corn, about 7 per cent; in frozen corn, "very little loss"; in cooked, frozen corn, about 7 per cent; in canned and reheated white corn, 5 per cent, yellow corn, 9 per cent.

Numerous reports in the literature indicate that canned vegetables lose vitamin C more or less slowly during storage. Even tomatoes, with their relatively high acidity, lost from 30 to 50 per cent during 6 months' storage (33). The presence or absence of light did not seem to be a factor in this study. Canned spinach was found to retain its vitamin C very well over long periods of storage (5). In a recent study (33) it was found that commercially canned tomato juice showed no significant loss in vitamin C upon standing in a loosely covered glass jar at 40° to 45° F. for 4 days. Juice extracted from commercially canned tomatoes showed a slight loss of vitamin C beginning the second day. The method of analysis was such as to allow for less experimental error than did a study reported earlier from the same laboratory (37) in which the loss from commercially canned tomato juice was 3 per cent in one hour under similar conditions of storage. More reliance should be given to the more recent data on all vitamin C determinations, because of the improved methods as a result of cumulative knowledge.

Reheating canned vegetables probably results in increased losses, although little data on reheating losses were found in the literature. Canned sweet corn lost 5 to 9 per cent of its vitamin C upon being reheated (31).

Drying is very destructive to vitamin C. Dried spinach contained none (5); leeks, Savoy and red cabbage lost 14 to 24 per cent; carrots, tomatoes and onions, 40 to 60 per cent; and celery, green beans, potatoes, parsley, spinach and cabbage, 70 to 95 per cent (3).

The data indicate with a reasonable degree of reliability the factors that decrease the vitamin C content and consequently, in the great majority of

cases, the factors that decrease the quality and total nutritive value of vegetables. These factors should be considered in calculating dietary intake, for not many vegetables are eaten in the strictly fresh, raw state.

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TARO (COLOCASIA ESCULENTA) AS A FOOD[1]

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TARO (*Colocasia esculenta* (L.) Schott.) for many centuries has been a common food crop in the islands of the mid-Pacific, in sections of southern Asia, in countries bordering on the Mediterranean, and in parts of South and Central America. Varieties known as dasheens[2] have been grown in Florida and other southeastern states for more than a quarter of a century. Several varieties are sold in the San Francisco Chinese markets, where they are purchased by Caucasians as well as Chinese.

The edible starchy *corm* (an enlarged subterranean stem) of the taro plant is somewhat similar in size and composition to Irish and sweet potatoes. The young leaves and the thick, succulent stems of the plant are also eaten. Taro seldom blooms, but the flowers when cooked are considered a rare delicacy.

Taro as a crop is one of the greatest food producers per acre in the world. It is easily grown (by both primitive and modern agricultural methods) and the great number of varieties makes production adaptable to many conditions of soil and moisture. The yield per acre is in some cases two to four times that of potatoes. In Hawaii an acre of taro yields, on the average, 5 to 10 per cent more calories in one year than an acre of rice. The time required for the crop to mature ranges from about 6 to 18 months, depending on variety, climate, and method of cultivation.

USE OF TARO IN HAWAII

The culture of taro probably reached its highest development in the Hawaiian Islands (4). A recent study of taro varieties at this station showed that out of more than 80 distinct forms, 69 were native to Hawaii (26). In these islands taro is usually eaten in the form of a soft paste called *poi*. The taro corms are steamed or boiled, peeled, then pounded or ground, with the addition of a little water, into a thick paste called *paiai* (containing about 30 per cent solids). In this form it keeps for several weeks without refrigeration, the resulting fermentation being considered a desirable quality. To prepare it for eating, paiai is mixed with water to make a slightly thinner paste and strained through a coarse cloth. This mixture is the well-known poi of the Hawaiians. The organisms of fermentation include yeasts and lactic acid bacteria. Allen and Allen (1) found the souring of poi to be similar to the souring of milk; namely, a production of organic acids (chiefly lactic) through the action of lactobacilli on the carbohydrates present. Bilger and Young (5) noted a decrease in sugars

[1] This and two succeeding papers on taro to be published in subsequent issues of this Journal, were presented in condensed form as one paper before the General Session, American Dietetic Association, Los Angeles, August 29, 1939. Published with the approval of the director, Hawaii Agricultural Experiment Station, as Technical Paper No. 61.

[2] The name dasheen is believed to be a corruption of the French "de Chine" (from China). This term was probably introduced from the West Indies, where the vegetable was originally called "taro de Chine" (Chinese taro).

and Miller (21) reported a decrease in the starch content of poi from 10.5 to 9.9 per cent during fermentation.

Taro, and the poi made from it, constituted the staff of life of the Hawaiian people at the time of the discovery of these islands by Captain Cook in 1778 (9, 10). The estimated 300,000 people in the islands at that time lived chiefly on poi, sweet potatoes, fish, *limu* (seaweeds), and a few greens and fruits (10). They had no milk other than human milk. The good physique and excellent teeth of the ancient Hawaiians (7, 16) testify to a diet adequate in bone- and tooth-building material. Taro, though relatively low in calcium, was eaten to such an extent, at least by adults, that it could have furnished the greater part or all of the daily requirement for this mineral. No doubt this one food furnished the early Hawaiians a large part of the calcium required to produce their strong skeletons and good teeth. The many hours of sunshine and the custom of wearing but little clothing no doubt afforded ample vitamin D to aid in the efficient utilization of the calcium and phosphorus in the diet.

Since the advent of the Caucasians the production and consumption of taro have greatly fallen off in Hawaii. Imported "civilized" foods (refined grain products and sugar) have been for some time replacing taro in the diet of the Polynesians, both in Hawaii and in Samoa. This change in diet is accompanied by an increase in dental caries (11, 23, 24).

COMPOSITION

The composition of steamed taro corms was given by Miller (21) in 1927 as follows:

	Per cent
Water	64.0
Protein	1.18
Ether extract	0.17
Starch (acid hydrolysis)	29.31
Sucrose	1.40
Reducing sugars	0.39
Ash	0.59
Calcium	0.026
Phosphorus	0.061

Composition data for the dasheen, given by Young (29), are similar to these figures. Chung and Ripperton (8) reported a range of 0.0015 to 0.0017 per cent iron in peeled taro corms. Hammond (12) found the iodine content of poi made from taro corms grown in Hawaii to be 300–400 parts per billion. The excess alkalinity of the ash of 100 gm. of air-dried taro corms was recently found, in this laboratory, to be equivalent to 18.1 cc. of normal alkali.

Miller (21) reported the corms to be rich in vitamin B (B complex) and to contain appreciable amounts of vitamin A, but to be poor in vitamin C. Recent tests in the nutrition department of this station show taro corms to contain about three-fourths as much vitamin B_1 (on the dry weight basis) as whole wheat flour. Preliminary tests show taro corms to be a good source of vitamin G (flavin).

Both the corms and the leaves of most varieties of raw taro have an acrid quality which causes a stinging sensation in the mouth and throat. This is due to the presence in the plant of microscopic raphides of calcium oxalate (6). These crystals and the acrid quality are destroyed by thorough cooking. Though raphides are visible in the corms under the microscope, the amount of oxalate present is so small that it cannot be de-

tected by chemical methods satisfactory for determining one part in 5000.[3]

NUTRITIVE VALUE OF TARO

Taro was considered by the early Hawaiians to be a very healthful food, easily digested, "most soothing to the stomach and highly beneficial to an invalid" (28).

Langworthy and Deuel (19) found the digestibility of taro starch, even when eaten in comparatively large quantities, to be 98.8 per cent. Langworthy and Holmes (20) found the starch of cooked dasheens to be 97.6 per cent digestible.

In olden days the Hawaiians commonly fed poi along with breast milk to infants, and this custom is continued even today. Plantation physicians in Hawaii have recently fed poi to a large group of young infants of Oriental ancestry with good results (13, 14). Taro flour and other taro products are being successfully used in infants' formulas in several hospitals in the mainland of the United States (15).

Kirkpatrick (17) reports that the Melanesians on the Island of Manus, northwest of New Guinea, who live chiefly on taro, have better-developed dental arches and less Vincent's gingivitis than do others of the group whose carbohydrate food is largely sago. He ascribes this to the higher vitamin content of taro (over that of sago). Larsen and others (18) found a high incidence of dental caries in a group of infants and young children in Hawaii, of Oriental ancestry, who received rice as their main source of carbohydrate. In children of the same ancestry fed an adequate diet in which poi replaced rice, only a small percentage showed evidence of dental caries.

[3] Unpublished data from the taro processing division of this station.

Due to its ready digestibility and its bland nature, taro is a satisfactory food for many individuals with digestive difficulties. Its high calcium and vitamin B_1 content make it preferable to refined grain products in restricted diets.

Since taro is so different botanically from any foods commonly used in the mainland of the United States, it has been suggested as a possible substitute for the frequently allergenic wheat and other cereal foods (2). For patients allergic to wheat, the dietary department of a California hospital has devised some recipes in which taro flour takes the place of wheat. None of the patients was found to be sensitive to taro (15).

TARO PRODUCTS

Various products have been prepared from taro corms from time to time during the past 60 years in Hawaii, both for local use and for distribution elsewhere. At present a taro flour is being manufactured by steaming, drying, and grinding the corms (3, 15). Taro flour has been used successfully to replace 15 to 20 per cent of the white flour in bread. In other products, such as cookies, doughnuts, cakes, waffles and muffins, as much as 50 to 100 per cent of the wheat flour may be replaced by taro flour. Due to its hygroscopic nature, the taro flour causes the baked products to retain moisture for a longer period than do the same products without the taro flour. Since refined wheat flour contains little vitamin B_1, the substitution of taro flour for part of the wheat flour improves the vitamin B_1 content of these products. Recently a division of the United States Army stationed in Hawaii found taro bread to be palatable and generally as well liked as regular issue bread. Pre-

liminary experiments in the nutrition laboratory of this station showed a taro bread to contain approximately 30 I. U. vitamin B_1 per 100 gm.—a value equal to that of one sample of whole wheat bread tested at the same time.

An infant food for use in formulas, and a beverage powder, both prepared from taro corms, are also on the market (15).

Taro corms are not suitable for starch manufacture because of the extremely small size of the starch granules and the mucilaginous nature of the juice.

INCREASED USE OF TARO ADVOCATED

The increased use of taro, in preference to other and less nutritious carbohydrate foods, is being urged in many localities. In the Dutch East Indies it is recommended as preferable to cassava, a common food in some sections there at present (25). In the island of Cyprus (27) the increased production and use of taro are advocated as a means of improving the nutrition of the people. Young (29) urges the growing of more dasheen (taro) in southern United States for human consumption and mentions its possibilities as a stock feed. He also lists recipes for the preparation of various dishes from this vegetable. Increased production and use of taro are being encouraged in various islands in the Pacific.

More extensive use of taro is being urged in Hawaii because of its capacity for correcting specific local dietary deficiencies (3). Published data (22) and unpublished studies in progress at this station among some of the various racial groups in Hawaii show many family dietaries to be deficient in calcium and in vitamin B_1. Additional indication of calcium deficiency, in a land where sunshine is abundant, is the occasional occurrence of mild rickets in infants; and a further evidence of a dietary shortage of vitamin B_1 is the recorded annual beriberi death rate in the Territory ranging from 5 to 36 per 100,000 during the past ten years. Increased production and use of taro would tend to decrease the amount of imported refined foods used and increase the calcium and vitamin B_1 contents of the deficient diets. Greater taro production would also aid in making these islands nutritionally self-sustaining (instead of being dependent on outside sources for over half of the food consumed) in time of possible maritime strike or war and consequent isolation from the mainland of the United States and other countries.

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Purchasing for the Small Hospital. Too much of our buying in small hospitals is done in a very haphazard manner. The department heads should be consulted concerning new types of supplies and equipment, but the buying must be done by the administrative officer, or one person trained to do it. The possible exception to this rule is the buying for the dietary department. The dietitian, by virtue of her training, is better able to market and get value received for her own department than anyone else.—*Dr. J. H. J. Upham, The Small Hospital and Its Principal Problems, Hospitals, May 1940.*

DIET IN PREGNANCY AND LACTATION[1]

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INTRODUCTION: In studying the material in the appended bibliography and in preparing the following dietary outline two points are paramount: first, what constitutes an adequate diet for the average, normal case during pregnancy and lactation; and second, what constitutes satisfactory management of the otherwise uncomplicated case of pregnancy that shows excessive weight gain? It is impossible to consider the question of diet in pregnancy without repeatedly encountering the associated rôle of the vitamins. Much important research and information has been available within recent years relative to vitamins and vitamin therapy. The whole question has a vital bearing on the welfare of the pregnant and lactating woman and commercial interests have not been slow to exploit this new source of revenue. In general, the average, healthy person should procure his vitamins at the market and not at the drug store. Granted that in certain instances there may be a definite need for artificial vitamin supplementation, it is nevertheless a just criticism that such supplementation is being overemphasized today. Instead, more attention should be given to the original constituents of the diet, *per se*.

Before attempting to outline what would seem to be a satisfactory diet in pregnancy and lactation according to accepted findings at present, it would probably be well to consider briefly some of the various isolated experiments and clinical observations which, when correlated, constitute the basis for the diet to be suggested.

Review: It has been shown (48, 49) that the food ingested by rats during pregnancy, lactation and the post-lactation period, as based upon the intake over the three weeks immediately preceding conception, increased on an average 19 per cent in pregnancy, 111 per cent in lactation and 21 per cent post-lactation. These findings are particularly interesting when compared with those obtained by the same investigators on three women whose physiological processes had previously been demonstrated to be adapted to the requirements of pregnancy and lactation. Their records include the intake of energy, protein, fat, carbohydrate, calcium and phosphorus computed at intervals on the same women throughout a complete reproductive cycle. It was found that the food requirements during pregnancy and the post-lactation recuperative period are approximately of the same magnitude. There was a curtailment of food consumption near the close of pregnancy. Lactation increased the food demands approximately 60 per cent over and above those of pregnancy. There were marked daily fluctuations in food intake during lactation. The similarity between the response of the rat and the human to the food requirements of pregnancy and lactation is impressive.

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In the human a definite nitrogen retention occurs during pregnancy (41). This retention exceeds the protein included in the fetus, placenta and membranes by a considerable margin. During pregnancy less protein is burned than in the normal, non-pregnant state (7); hence the positive nitrogen balance in pregnancy. The disintegration of the protein molecule is more difficult as evidenced by the appearance in the blood and urine of pathological protein derivatives of high molecular weight, such as uric acid, indican and polypeptids. The remaining nitrogen is usually unchanged in the blood and diminished in the urine. Nitrogen balance studies in one instance showed that a daily intake of from 9 to 19 gm. of nitrogen resulted in a positive balance up to 6 gm.; in another instance (20) it was found that an average daily retention of 1.84 gm. occurred. Since the average full grown fetus contains no more than 100 gm. of nitrogen, such retentions are not only ample for growth but must result in a gain to the mother herself. This storage of nitrogen continues throughout pregnancy and probably serves as a reserve for the puerperium and lactation.

The fetus has need for nearly all the commonly known vitamins but cannot synthesize any of them; they must be provided in the mother's diet. It is known (55) that during the first half of pregnancy the fetus stores vitamin A in the liver for use when growth is much more rapid. Deficiency of the B complex may lead to abortion or premature delivery. Lack of vitamin C, if marked enough, will cause intra-uterine death of the fetus, death shortly after birth or if life is continued, the young may show evidence of reduced resistance and often defective development (44). The literature is replete with examples of the primary importance of vitamin D in the absorption of calcium and hence also its vital relationship to adequate dental and skeletal growth. More recently the influence of vitamin E on sterility and abortion has been demonstrated (57).

Much emphasis has been placed on the investigation of calcium and its metabolism. The importance of this one factor in pregnancy and lactation undoubtedly merits all the attention it has received and more. Among the more important recent contributions in this field are those from the Nutrition Research Laboratories of the Merrill-Palmer School and the Children's Hospital of Michigan at Detroit. From this source come the records of calcium and phosphorus balances of three women who were consuming their usual home diets known to be abundant in food essentials. The studies were made at monthly intervals during the last half of pregnancy. Preceding conception, all three women had completed a year of heavy milk flow. Appreciable losses of calcium were experienced by each of the subjects at some time during the observation period but there was no constant relationship between the period of gestation and calcium loss in the three individuals. Losses in one case were found at the twenty-sixth and thirtieth weeks; in another at the fourteenth week; and in the third case at the thirtieth and thirty-fourth week. Phosphorus was retained in large amounts at the periods observed, with but two exceptions, by all three subjects. There were noticeable variations in the metabolism of different individuals at the same time during gestation as well as in the

same individual at different times during the period. Other investigators have found that calcium retention was somewhat irregular but showed a marked tendency to rise toward the end of pregnancy. A tentative standard curve, based on 11 observations of the 3 subjects storing the most, began to rise about the fourth month, continued gradually to about 0.2 gm. daily by the ninth month, then somewhat more steeply to 0.3 gm. by the last week of pregnancy. The amount stored by most women was far below this curve and below a similar one computed from published analyses of fetuses, as well as much below the only other case reported in the literature. Phosphorus retention tended to rise 0.15 to 0.20 gm. per day by the fifth month and then ran fairly parallel to the calcium curve. High magnesium intake sufficient to change the Ca/Mg ratio from 3.5 to 1.5 seemed to have no effect on calcium retention. Diets with a slightly alkaline residue result in an increased retention of calcium (16), whereas diets consisting largely of meats, fats, sugars and starches result in an acid residue and tend toward increased elimination of calcium. It is important to realize that calcification of the first teeth begins before the fifth month and that of the first molars is well under way before birth (35). The daily fetal absorption of calcium during the last two months is 0.6 gm. of calcium oxide—an amount as great as the estimated daily requirement of the average adult. During the last four weeks of pregnancy the fetus requires a quantity of calcium approximately sixteen times that circulating in the mother's blood at any given time (52). It has been demonstrated that the percentage of ash increased from 0.001 per cent at six weeks to 3.3 per cent of total weight at term. The following table shows the very rapid increase beginning approximately with the fifth month:

Total Ash of Fetus at Various Times

4 months	0.369 gm.
5 months	1.33 gm.
6 months	6.00 gm.
7 months	26.00 gm.
Term	100.00 gm.

Evidence of alteration of calcium in the blood by diet seems contradictory. Most investigators find blood calcium little affected by diet. There is some evidence to indicate that if the blood calcium is abnormally low the dietary calcium may tend to raise the blood content to a normal level. The calcium in the bones seems to regulate the concentration of calcium in the blood.

Discussion: Sherman has stated, "Observation shows that man or other animals when eating varied food under the unrestricted guidance of hunger and appetite tend to take such quantities as are proportional to the energy requirement, whether or not this amount meets also the requirements as to each of the substances known to be necessary in nutrition". This statement implies that there is more to consider under the question of diet than simply calories. The foregoing citations and a review of the complete reports from which they have been taken, suggest several points that have a definite and practical bearing on the subject under consideration. To begin with, it would probably be a very wise step to adopt the triple classification of all foodstuffs under the heads suggested by McCollum: (1) Protective foods (milk, leafy and raw vegetables,

fresh fruits, minerals). (2) Tissue building foods (protein). (3) Energy yielding foods (fats, sugars, starches).

There has been too widespread a tendency, when thinking of diet, to think primarily in terms of calories. Diets so regulated may be temporarily effective in attaining an end, either a gain or a loss in weight, for instance, but unless thought is simultaneously given to the essential elements of nutrition a grave health hazard is introduced. This hazard is nowhere more important than in the pregnant woman, for here the health of two or more individuals is in the balance. Neither the maternal nor the fetal organism can synthesize vitamins. They must be supplied in the diet. Certain minerals, particularly iron, calcium, phosphorus and sodium are indispensable and yet their caloric value is nil. One investigator has called attention to the fact that at the end of the third month the total mass of the various constituents present in the fetus is not in excess of what the mother might comfortably be able to eat at a single meal. Yet to provide a woman with such a meal at the onset of pregnancy and expect its transformation into a pulsating living being at the end of the first trimester is physiologically impractical. Nature takes three months for the growth of such a fetus. The process is one of biologic precision in which each element needed is called for when and as often as needed. The source of supply for this demand is twofold: (1) maternal diet and (2) maternal reserve. If it were possible for us to understand the minutest details of embryological development it might be possible to so regulate the daily diet as to supply just the elements needed at the right time and in the proper amounts. Obviously, to furnish the building material for any structure in such a manner should be conducive to optimal development. Unfortunately this presupposes an understanding of embryology far beyond what is actually known and hence we find ourselves confronted by the necessity of depending to a very large degree on the second of the above mentioned sources of fetal nutrition: namely, maternal reserve. Since we cannot supply in the diet from day to day just the kind and amount of elements that the fetus will need on each particular day, we must content ourselves with building up in the mother a reserve that is available to the fetus at any time. The problem of diet in pregnancy then resolves itself into supplying the mother with adequate nutritional elements for her own use and a reserve for utilization by the fetus. Here a very important point arises: that is, to recognize the fact that this reserve must consist largely of the protective and tissue building elements rather than the energy yielding foods, since the fetus leads a most passive existence; also, since the facilities for storing protein are very meager, this substance must appear continuously in the diet.

The following daily minimal protective diet is suggested as consistent with the present knowledge of nutrition and suitable for the average healthy woman during pregnancy:

Daily Minimal Protective Diet

Articles per 24 hr.	Calories per 24 hr.
1 quart milk (to be used as a beverage with meals, between meals, or in making soups, custards, etc.)	650
1 egg (used as such or in the preparation of custards, etc.)	70

Articles per 24 hr.	Calories per 24 hr.
1 serving lean meat	150
3 servings raw vegetables (lettuce, celery, tomato, cabbage, carrots, etc., without sugar or oily dressing)	75
3 servings cooked vegetables (green beans, carrots, cauliflower, greens, spinach, broccoli, Brussels sprouts, etc., without fat)	150
3 servings fruit (one-half to be uncooked. Oranges, lemons, pineapple, peaches, grapefruit, apples, berries, etc. Without sugar or cream)	200
2 slices whole grain bread or 1.5 oz. whole grain cereal	120
1 square butter	100
	1515

For full protection of both mother and child, the above diet should be taken daily throughout pregnancy. It is composed with the primary object of providing the indispensable protective elements and bulk with almost a total disregard for caloric values. For this reason it is best thought of then as a basic or fundamental diet representing a safe minimum of the protective foods, to which such supplementary additions must be made as indicated in each individual case in order to keep the entire diet balanced and provide a proper caloric intake. Just what these supplementations should be will largely be indicated by gain or loss of weight and by the general condition of the patient.

The average patient at light work will require approximately 2500 calories per day. Since the protective diet suggested provides only 1500 calories the difference to be made up in the supplementary diet is approximately 1000 calories. A satisfactory supplementary diet is suggested.

Supplementary Energy Yielding Diet

Articles per 24 hr.	Calories per 24 hr.
2 squares butter	200
4 slices bread	240
2 servings potato, rice, or macaroni	200
1 serving meat, cheese, or egg	150
Sugar and cooking fat	200
1 dessert (pudding, pie, ice cream, cake)	200
	1190

One disturbing and not uncommon complication of pregnancy is an excessive gain in weight. This condition is all too often countered by an unwise curtailment of intake without thought of the essentials of nutrition. The particular merit of the dietary plan suggested lies in the singular flexibility with which it allows unlimited caloric supplementation in the underweight patient, or provides for caloric restriction to an absolute minimum in the overweight patient without disturbing the essential protective nutrition of either. Thus by clearly dividing the total diet into its protective portion on one hand and its energy yielding portion on the other, it is immediately apparent that in the event of too rapid gain in weight any restriction of intake should apply primarily to the supplementary diet while the protective diet is continued unaltered. Should it become necessary or advisable at any time to increase the caloric intake beyond the 2500 calories furnished by the combined protective and supplementary diets, both may be increased at will, *but the protective diet should never be decreased below the minimum suggested.*

If a first class quality of foods is used in the fundamental diet such a diet will provide ample protein (milk contains

the essential amino acids), vitamins and minerals with the exception of vitamin D. This very important vitamin is present in the diet suggested in amounts insufficient for the demands of pregnant or lactating women. Nature did not intend that man should derive his vitamin D primarily from diet, but by direct radiation with sunlight. In submitting the above diets it is assumed that the patient is following a well rounded prenatal program which would include regular exposure to direct sunlight. Failing this, other sources of vitamin D should be provided. It is not the purpose of this paper to discuss in detail all the complications of pregnancy and lactation that might call for supplementation of the protective elements (vitamins, minerals or protein). The following rather general statements, however, are apropos. Should need arise for increasing the protein intake, it would be wise to add such animal proteins as fish, liver, kidney, brain, heart and lean beef, as these would supply a good variety of amino acids. The policy of paying particular attention to the *quality* and *variety* of the foods supplementing the protective diet is most highly desirable. Calcium is the mineral most commonly supplied to pregnant and lactating women in artificial form. Some obstetricians recommend its use routinely. Even though there may be occasional need for such therapy, nevertheless it is much more logical to set these patients aright, as far as their primary diet habits are concerned, than to create in their minds (and perhaps one's own) a false sense of security in artificial mineralization. Attention might here be called to the tendency on the part of some to give excessive doses of vitamin D (in concentrated liver oils and in viosterol) where a low blood calcium is found or suspected. It has been demonstrated (19) and corroborated (25) that excessive doses of irradiated ergosterol result in hypercalcemia even on a diet absolutely free of calcium. It is obvious that the source of this calcium must be the tissues. The whole subject of vitamin synthesis, extreme concentration and accurate dosage is still in such an unsettled state that it would seem only the part of wisdom in dealing with normal pregnant women to rely on the natural sources of both vitamins and minerals whenever possible, at least until more definite information is available. A happy circumstance is found in the matter of citrus and some other fruits in their relation to calcium retention. Their use is encouraged because they are a prolific source of vitamin C and their metabolism results in a moderately alkaline residue which greatly favors calcium retention.

For those individuals living in the so-called "goiter belts", the recommendation is made that sea food in some form be included in the diet at least twice weekly. If this is not practicable the use of iodized salt will provide the necessary iodine.

LACTATION

What changes should be made in the above diet to best meet the needs of lactation? In reality no change need be made as far as its constituents are concerned. In all likelihood the quantity consumed to maintain a good milk output will be greater than that necessary during pregnancy. This has actually been proved true in both the rat

and the human (48, 49). The explanation of the marked increase in food intake is to be found, of course, in the high caloric value of the mammary secretion being daily elaborated and lost by the mother. This may be simply demonstrated:

1 liter of human milk has a caloric value of	700–800 calories
A 60 kg. woman at bed rest requires	2000 calories
A 60 kg. woman at light work requires	2500 calories

If such a woman were secreting one liter of milk per 24 hours, she would have to be provided with a caloric intake of at least 800 calories over and above her own requirements.

The addition of cod liver oil and yeast to the usual home diet of nursing women has been shown very favorably to influence calcium and phosphorus utilization (29, 30). Previously the same investigators had demonstrated that women who had experienced the physiological demands of frequent pregnancies and prolonged, abundant milk flow were in negative calcium and phosphorus balances at the sixth and twenty-seventh weeks of lactation; although consuming diets superabundant in food constituents, with 3 to 4 gm. each of calcium and phosphorus, 27 to 29 gm. of nitrogen and 3700 to 4700 calories per day, they had progressively lost calcium and phosphorus in appreciable excess of their intakes during the first six months after parturition, according to 4-day metabolic studies. This is a most forceful plea against rapidly repeated pregnancies and lactation periods.

A most thorough and helpful study (21) of diet in lactation established the fact that the proportion of digestible protein to digestible carbohydrate and fat should be 1:6 or narrower, to meet the needs of nursing mothers most advantageously; that animal protein is more suitable than vegetable protein (nuts excepted) in supplying nitrogen for milk and maintenance of nitrogen balance; that an exclusive fruit, vegetable and cereal diet is not satisfactory in human lactation; and lastly, that of the various forms of animal protein, that which is derived from cow's milk is particularly suitable for the production of human milk protein as well as for the protection of the mother. This same author has shown the outstanding significance of cow's milk in the diet of lactating women by demonstrating that a test diet whose protein was vegetable, except for milk which constituted 23 per cent of the protein fed, was more efficient in keeping the mother in positive nitrogen balance and producing calories and milk nitrogen than was another type of test diet whose protein was 50 per cent animal, only a small proportion of which, however, was derived from milk.

Conclusion: The material reviewed justifies the idea that the use of a minimal protective diet as suggested, supplemented in any given case as indicated, would be of definite benefit to both mother and child in pregnancy and lactation. Since it is of great importance that the maternal organism be in as good condition as possible at the very onset of pregnancy, the diet would seem indicated for at least a period of some weeks before conception; since there is always the possibility of the drain of pregnancy and lactation having been more than was anticipated, there would seem to be an indication for continua-

tion of the diet for some weeks post-lactation.

More intelligent attention to proper nutrition during pregnancy and lactation would unquestionably be rewarded by a lowering of the still and premature birth rates, a decrease in maternal and postnatal infant mortality, an increase in the average health of full-time babies and an increase in the mothers' general health and ability to breast-feed their children successfully.

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TODAY hospitals form a very important part of what Sir William Osler called "man's redemption of man." In that delightful address, he described the beneficent result of anesthesia, of antiseptic and aseptic surgery and of the abolition and prevention of fevers and acute infections. We may well add to those elements in man's redemption of man, the emphasis laid today on preventive medicine, on the relation between nutrition and health, physical therapy, radiology, and the comparatively new field of chemotherapy. The hospital has its part, no small part, in man's redemption of man.

Hospitals are institutions for the temporary reception of the sick. The word *hospitalis*, by derivation, is an adjective belonging to the noun "*hospes*," and that may be translated either "host" or "guest." The word "hotel" and the word "hostel" have the same derivation, but like the word "hospital" have become limited and specialized in their application. The original simple function of the hospital to be a temporary receptacle for the sick, has been, in modern times, vastly enlarged; the present day hospital represents an evolution or development extending over many centuries. We passed from the day when it was a refuge for the sick to the day when it helps all classes; from the day when it cared for the individual to the day when the whole community is served; from the time when the hospital was merely a remedial institution to the time when it is a positive, constructive apostle of health.—*Dr. Henry J. Cody, The contribution a hospital may make to its community, Hospitals, January, 1940.*

EDITORIAL

THE NEW YORK MEETING

Of course you are coming to New York for the annual convention, and coming early, writes Edith Barber, national publicity chairman. There's the World's Fair to which you can well devote the week-end. Sunday will be American Dietetic Association Day at the Fair, and the welcoming tea, planned for you by the members of the state dietetic associations of New York and New Jersey, will be served at one of the most attractive buildings on the fair grounds. Plans are being made to allow you to register by mail at the national headquarters in Chicago so that your badge will be ready for you to pick up at the Pennsylvania Hotel early Sunday morning. All you have to do is to cross the street to the Pennsylvania Station and get a train which will land you in ten minutes at the Fair entrance.

The convention will officially open Monday morning with the address of the President, Beula Becker Marble. The welcoming luncheon and an afternoon program with distinguished speakers will follow. At the close of the afternoon meeting, you will have an opportunity to meet the officers and chairmen of the various New York committees at an informal buffet supper.

The program for the remainder of the week is almost complete and Nelda Ross, program chairman, makes the following comments:

> Suggestions for the program were solicited from many members and the response was so enthusiastic that the committee could not include all the requests on a single program. Therefore two or more sessions may be in progress at the same time. Be sure to register early in order to hear the address of the President, Mrs. Marble, at the opening session. You will all want to hear Edith Barber talk about the history of food at the welcoming luncheon, and everyone will be interested in the vitamin symposium organized by Dr. Hazel Munsell, on Monday afternoon. Monday night, many will be interested in the program on personnel management, or you may enjoy the session on maternal and child welfare. Tuesday morning you may choose between a diet therapy program headed by Dr. Helen S. Mitchell, or an administrative session including Mrs. Nathaly Smillie, interior decorator. Tuesday afternoon, Katharine Fisher will tell you what the public wants to know about nutrition.
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> Wednesday morning you may like to hear the discussion on food cost control led by Mr. Joseph Brodner, an accountant, or you may be more interested in the diet therapy program, including "What the Dietitian Should Know about Clinical Laboratory Methods." On Wednesday afternoon, "Progress of the Year", under the direction of Frances MacKinnon, will give you reports of significant projects studied by the Association during the past year. Thursday you may find it difficult to choose between a talk on new equipment by Mr. Owen Webber, and one on the development of important ideas in the educational field. Thursday afternoon's high light is Dr. William Schmidt's address, "Normal Nutrition Requirements for Adolescents." The climax of the formal program will be the annual banquet Thursday night.

Trips and demonstrations for food service directors are being arranged by Dr. Mary deGarmo Bryan for Friday. The program committee expects to arrange for food clinics in various hospitals for those interested. If any of you do not find your particular interest in this tentative program, send me your suggestions and the committee will try to include them.

Of course you will want to go to the theatre while you are in New York. Later in the summer, when more information as to the plays which will be on the boards during the week of the meeting is available, you will receive an announcement and a blank to fill out for reservations at the price you wish to pay. When you arrive, a list of restaurants of all types, both in New York and at the Fair, will be provided for you, as well as planned itineraries for trips to hospitals, museums and historical landmarks.

And now about the food for the scheduled luncheons and dinners! The fact that this is under the supervision of Marie Casteen guarantees its interest and quality. The new experimental kitchen of the Statler Hotels is already busy with plans to show you "How America Eats."

Is it necessary for me to urge you any further to come early and stay late?

THIS PROBLEM OF AGING

Much thought is being directed today toward the problems of the aged. These problems concern not only industry and medicine, but society generally. Statistics show that many more people are now living to a ripe old age than in previous decades. The average duration of life at present is over sixty years, whereas in 1912 it was only forty-seven. It has been estimated that before long the average life expectancy will reach seventy years.

In industry and in other activities as well, the man past sixty, and sometimes even younger, is retired. He then becomes a social problem. Legislators have tried to provide for this class through an old age pension system. The "Ham and Eggs" scheme, evidently supported by well-intentioned people, demonstrated a human interest in the aged.

It is now realized, however, that a pension plan which contributes financial support only is not adequate to meet the situation. One author[1] states the problem as follows: "It is likely that a constantly increasing number of pensioners will begin permanent retirement from paid employment at earlier ages than in the past, perhaps at 50 or thereabouts, and will have longer expectancies than before. The retirement period, therefore, will present a considerable portion of the life span, perhaps one-third or even more, in some individuals." A plan has therefore been suggested for re-training these employees in order to prepare them for less arduous jobs, and re-allocating the work so that the older employee may be assigned to tasks which do not require great speed and strength; jobs, for instance, where judgment and reliability are essential. This problem may affect the hospital field as well as industry. Indeed it is already felt, for the hospital employee is not eligible for old age pension or even for

[1] George Lawton: Constructive proposals regarding older workers, Personnel Journal, 18: 300, February, 1940.

unemployment compensation under the Social Security Act.

The hospital field is being affected in another way, for it is receiving many more of these older people as patients. This means that more and more sufferers from chronic diseases, which are chiefly an old age problem, will be seeking medical care. The medical profession is awakening to this responsibility as indicated in recent medical literature. The term, "geriatrics" (medical treatment of the aged), has recently been introduced by Tuohy[2] who states, "Internists must cultivate this field [geriatrics] and take some lessons from the pediatricians who with adequate diets and fat soluble vitamins A and D, have done so much for their clientele."

Sherman[3], in addressing a medical group, pleaded for "a wider recognition of the fact and principle thus fully established, that the hitherto accepted norms of health and of length of life can be advanced, enhanced, improved by a more scientific distribution of emphasis in the choice and use of food."

Undoubtedly we shall hear more on this subject as time goes on and as research opens up new avenues of approach.

CURRENT COMMENT

CHILDREN IN A DEMOCRACY

ANNA M. TRACY

The second and major session of the Conference on Children in a Democracy, held in Washington, January 18–20, 1940, was the fourth of such conferences called by presidents of the United States at ten-year intervals. It will be recalled that the first, called by President Theodore Roosevelt, resulted ultimately in the formation of the Children's Bureau; the second devised standards of health, education, and welfare of American children; while the third conference saw the formation of the "Children's Charter". The 1940 Conference appropriately considered the special place of the child in a democracy.

The first session of the fourth Conference was held in April 1939. The purpose of this session was to discuss objectives and to appoint a planning committee. The planning committee in turn appointed, among other groups, a report committee with Homer Folks of New York as chairman. This committee was given the arduous task of writing the findings of the eleven sections into a Conference Report which after its final adoption was to be presented to the President of the United States.

The first general session of the major Conference was called to order by the Honorable Frances Perkins, Secretary of Labor. Instructions were given to the 672 delegates as to procedure and plans for group discussions outlined. Delegates were privileged to meet in one of the eleven sections into which the total group was divided for specialized study and action. They were urged to discuss freely the reports of their special sections and stress was laid on the fact that all reports were subject

[2] Tuohy, E. L.: Geriatrics in relation to an adequate energy producing and protective diet, J. A. M. A., 114: 223, January 20, 1940.

[3] Sherman, H. C.: The bearing of the results of recent studies in nutrition on health and length of life. Bulletin of New York Academy of Medicine, 13: 311, June 1937.

to revision before adoption, even though compiled by experts from factual material gathered by the research group, and based upon the opinions of authorities in various fields.

The wide scope of the interests and work of the Conference is indicated by the titles of the sections, namely: The Family as the Threshold of Democracy; Economic Resources of Families and Communities; Housing the Family; Economic Aid to Families; Social Services for Children; Children in Minority Groups; Religion and Children in a Democracy; Health and Medical Care for Children; Education Through the School; Leisure-Time Activities. But in spite of these subdivisions, the "whole child," rather than his component parts was considered in final summary—an accomplishment ordinarily not easily achieved in so large a group.

The dietitians and nutritionists present were especially interested in the section on Health and Medical Care for Children, presided over by Dr. Henry F. Helmholz, professor of pediatrics at the University of Minnesota. It was gratifying to see throughout this section report the many references to nutrition, and to the place of nutrition in a child health program. A specific recommendation of the report reads as follows:

> It is recommended, in recognition of the fundamental importance of nutrition to the health of children, that the President appoint a National Nutrition Committee composed of scientists, economists, agricultural experts, consumers' representatives, teachers and administrators. Such a committee would coordinate the various efforts now being made to improve nutrition through practical programs or through research, and should give impetus to a national program of action that would mean more food of the right kind for more children.

The general session of the Conference held at the White House on Friday evening was addressed by President Roosevelt, following the presentation of the Conference Report to him by the Secretary of Labor. In commenting on various sections of the report, the President made this statement:

> So, too, good nutrition is the basis of child health. And I am equally in sympathy with your suggestion that I appoint a national nutrition committee to review our present knowledge and to coordinate our efforts, looking toward the development of nutrition policies based on the newest and best methods—and we are making new discoveries every day.

The Conference closed with a session devoted to plans for follow-up work through state and local agencies. Since the personnel of the Conference consisted of groups of citizens from all walks of life, it is likely that their findings will have expression through a like group of interested citizens in communities large and small throughout the nation.

METHODS OF ASSAYING THIAMIN IN FOODS

HAZEL E. MUNSELL

The editorial on "Thiamin in Foods" in the April issue of this JOURNAL recently came to my attention. The bulletin referred to in this editorial contains material of a type and form eagerly sought by those dealing in food values, and perhaps by dietitians more than

any others. Therefore it seems pertinent to call attention to the need for keeping certain facts distinctly in mind when using the data presented, or in fact when using material of this kind from whatever source.

As more and more data have accumulated on the occurrence of vitamins in foods, we have become increasingly conscious of the wide variations that may be found in different samples of a food in respect to the content of any vitamin it contains. This factor was recognized as a problem during the early work on the biological methods of assay when it was almost essential that foods for assay be of constant composition. The fact of sample variation in vitamin content is now accepted as a problem of considerable practical significance.

The biological method of assay in which gain in weight of an animal is used as the criterion of measure involves the feeding of successive samples of the test material over a period of time, anywhere from 3 to 5 or 8 weeks. The basic assumption for these methods is that the same quantity of the vitamin being measured is supplied in each sample. However, if the material being assayed is a perishable product that cannot be stored without loss of vitamin value, then a fresh sample must be obtained each time supplements are fed. These samples may vary considerably in their content of the vitamin even though great care is taken to select them for uniformity. The question then arises: What is the significance of the assay value from such a collection of samples? It represents a composite, to be sure, but a composite about which we know very little. The suggestion might even be made that if there is significant variation in the vitamin content of the samples the order in which they are fed might affect the final result.

It is suggested that the safest procedure is to consider such assay values as if obtained on a single sample, and avoid any tendency to take them as average values. They should be compared and appraised in relation to values obtained in other assays if and when there are such.

In the editorial in question reference was made to the fact that the values in the bulletin were calculated on the basis of average gain per week of the experimental animals. It is generally true in work of this kind that rate of gain is not uniform but proceeds more rapidly at first and then levels off. The average gain for a short assay period might be appreciably greater than for a long one. The more usual method of evaluating results is on the basis of total gain at the end of some specified period such as 3, 4 or 5 weeks. Calculation of assay values in the present instance on the basis of average gain per week should not be considered an error since the assay value obtained is the same in either case. The expression "average gain per week" does involve a fallacy, however, which in some instances may lead to erroneous conclusions.

In the growth method of assay the measurement consists in determining the relation between gain in weight and the quantity of vitamin ingested. This relationship is not linear. Therefore, when only two points are used to establish the relation they must be reasonably close together, otherwise the assay value calculated from the results may be in error on the low side. A number of the values in the bulletin under discussion should be appraised with this in mind

and more especially perhaps those that were calculated by extrapolation on an assumed relationship.

The comments presented here should not be construed in any sense as destructive criticism, but are offered because of a sincere and long standing interest in the subject of the vitamin content of foods, and with the hope that they may prove helpful from the standpoint of interpretation.

REPORT OF THE NOMINATING COMMITTEE, 1939–1940

LENNA F. COOPER

The method of selection of the slate offered by the Nominating Committee of the American Dietetic Association to the membership is comparable, we believe, to the Gallup survey by which our country is kept informed as to public opinion on many important questions. An effort is made to sample opinions in various parts of the country through the duly elected officers, committee chairmen and other representative members of the Association.

The committee began its work in January when a letter, approved by the national president, was sent to representatives of state associations, including the president and delegate to the House of Delegates, and to members of the Executive Board and past presidents. Thus a total of 99 persons had opportunity to suggest candidates for the office of president-elect and secretary, and for the nominating committee. As the state representatives were asked to consult their board and, if possible, the membership, it is believed that the suggestions received, 55 in all, were representative of the state groups.

Thirty-four names were suggested for president-elect, 68 for secretary and 163 for members of the nominating committee. The committee reviewed the lists presented, keeping in mind the following points: (1) regional representation; (2) professional activities; and (3) experience in the administrative affairs of the Association. It is generally considered desirable that the president-elect shall have had some knowledge of the methods and policies as well as the business of the Association through previous experience as a member of the Executive Board.

With these points in mind, the committee considered the suggested names and each member presented a tentative slate. The results of their voting were tabulated and sent again to the committee members for their final vote. The nominees were then approached for permission to include their names in the capacity for which they had been selected.[1]

The committee, therefore, presents for 1940–1941 the following slate: President-Elect, Nelda Ross; Secretary, Man-

[1] According to Article V, Section 6 of the Constitution "Other nominations may be made by nomination petitions signed by not less than one hundred members of the Association, of whom not more than ten shall be from any one state, assented to in writing by the person or persons named thereon as nominees, and filed with the Secretary at the office of the Association on or before the fifteenth day of August. After the fifteenth day of August an official ballot shall be prepared by the Secretary. In the event that any nominations are made by such petitions the words 'committee nominee' shall follow the name, place of residence, and professional designation of any candidate proposed by the Nominating Committee, and the words 'nomination petition' shall follow the name, place of residence, and professional designation of any candidate nominated by not less than one hundred members as hereinbefore provided."

iza Moore and Mary W. Northrop; and Nominating Committee, Grace M. Augustine, Texas; Alma E. Bering, Maryland; Marie L. Hines, Ohio; Ruth M. Kahn, Missouri; Dorothy A. Milavetz, Connecticut; Margaret Ritchie, Idaho; Anna M. Tracy, Florida; and Sister Mary Victor, Minnesota.

We also submit a brief biography of each candidate.

AMERICAN DIETETIC ASSOCIATION NOMINEES 1940–1941

For President-Elect: Nelda Ross, B.S., University of Illinois. Graduate study: M.S., University of Iowa; student dietitian, University of Iowa; University of Chicago. Positions held: teacher of home economics and chemistry, High School, Drake, North Dakota, and Union, Oregon; food chemist, Illinois State Department of Agriculture, Division of Foods and Dairies, Chicago; dietitian, U. S. Veterans Bureau Hospital, Chicago; therapeutic dietitian, University of Iowa Hospital. Present position: director, Nutrition Department, Columbia-Presbyterian Medical Center, New York. Publications: author of article in *The Trained Nurse and Hospital Review*, December, 1929; joint author of article in the *Journal of the American Medical Association*, June, 1927. Professional activities: chairman, Diet Therapy Section, chairman, Hospital Student Approval Committee, vice-president, and treasurer, American Dietetic Association; chairman, Program Committee, Greater New York Dietetic Association. Present office: chairman, Program Committee, American Dietetic Association.

For Secretary: Mary W. Northrop, A.B., Vassar College. Graduate study: M.S., Teachers College, Columbia University; student dietitian, Presbyterian Hospital, New York. Positions held: dietitian, Munsey Home Hospital, Munsey, Indiana; dietitian, Montefiore Hospital, New York. Present position: chief dietitian and housekeeper, King County Hospital System, Seattle. Publications: Articles in the JOURNAL of the American Dietetic Association and *Modern Hospital*. Professional activities: president, Washington State Dietetic Association; chairman of a number of professional committees; chairman, Program Committee, 1939, American Dietetic Association. Present office: member of the Journal Board, American Dietetic Association.

For Secretary: Maniza Moore, B.A., Mississippi State College for Women. Graduate study: student dietitian, Peter Bent Brigham Hospital, Boston. Positions held: dietitian, Grace Hospital, New Haven. Present position: dietitian, Beth Israel Hospital, Boston. Publications: none. Professional activities: president, Massachusetts Dietetic Association; chairman, House of Delegates, American Dietetic Association.

Nominating Committee

Grace M. Augustine, B.S., Ph.D., Columbia University, New York; formerly dietitian-housekeeper, New York Orthopaedic Hospital and Dispensary, New York, and associate in household arts, Teachers College, Columbia University, New York; now head, Institution Management Division, Texas State College for Women, Denton.

Alma E. Bering, A.B., University of Nebraska, M.A., Teachers College, Columbia University, student dietitian, Presbyterian Hospital, New York; for-

merly assistant in Chemistry Laboratories, University of Nebraska; now chief dietitian, Sheppard and Enoch Pratt Hospital, Towson, Maryland.

Marie L. Hines, A.B., B.S., Western Reserve University, and M.A., Columbia University; formerly teacher of home economics and manager of lunchroom, Willson Junior High School, Cleveland, instructor in household administration, consulting dietitian, and purchasing agent for the University Dining Rooms, Western Reserve University; now director of dietetics, University Hospitals, Cleveland.

Ruth M. Kahn, B.S., University of Illinois, student dietitian, Barnes Hospital, St. Louis, and graduate work, Teachers College, Columbia University; formerly dietitian, Barnes Hospital; now chief, Food Clinic, Washington University Medical School Clinics, St. Louis.

Dorothy A. Milavetz, diploma, Stout Institute, B.S., Columbia University, student dietitian, University Hospital, Minneapolis; formerly dietitian-housekeeper, Holzer Hospital, Gallipolis, Ohio, chief dietitian, Cleveland City Hospital, and nutritionist, North End Clinic, Detroit; now director, Department of Dietetics, Grace Hospital, New Haven.

Margaret Ritchie, B.S., M.A., Columbia University; formerly assistant in home economics, Columbia University, instructor in home economics, School of Home Economics, Battle Creek, and assistant director and director of home economics, Battle Creek College; now director of home economics, University of Idaho, Moscow.

Anna M. Tracy, diploma, Battle Creek College, B.S., University of Chicago; formerly hospital dietitian, administrative food work, Government Service, Washington, D. C.; now dietitian and associate professor, institution economics, Florida State College for Women, Tallahassee.

Sister Mary Victor, B.S., Columbia University, M.S., University of Minnesota, student dietitian, St. Mary's Hospital, Rochester, Minnesota; formerly dietitian, St. Mary's Hospital; now director, Department of Nutrition, St. Mary's Hospital.

Mandelic Acid and Epilepsy.

Mandelic acid has been used as a substitute for the ketogenic diet in an attempt to produce a similar effect. While no reports have been published, mandelic acid has been tried and found to have no effect on the convulsions of epilepsy. It is well known that mandelic acid is excreted unchanged in the urine. It is not conjugated or metabolized, therefore it does not produce the ketosis or beta-hydroxybutyric acid which is the aim of the ketogenic diet. Peterman demonstrated that acidification produced with ammonium chloride or with an organic acid carbon atom fat had no effect on the seizures of epilepsy. After Cook had shown the bactericidal effect of the urine of some patients on the ketogenic diet, Rosenheim found an organic acid (mandelic) which was excreted intact and gave the urine bactericidal properties. However, this acid does not produce a ketosis or ketonuria, which seems to be essential to produce results in the treatment of epilepsy.—*Queries and Minor Notes, J. A. M. A., 114: 1481, 1940.*

BOOK REVIEWS

Quantity Food Service Recipes. Compiled by the Administration Section of the American Dietetic Association under the direction of Adeline Wood, chairman. Philadelphia: J. B. Lippincott Company, 1940, pp. 436. Price $4.00.

This, we believe, is the largest collection of quantity recipes yet published. More than 1000 recipes, the majority to yield 50, 100, or multiples of 10 servings, are presented. The typographical arrangement is exceedingly legible, pleasing and coherent. The bold-face section headings in the upper left and right hand corners of the page are a decided convenience. Jean McConnell's cartoons should amuse, the recipes will speak for themselves, and the whole book will reflect credit upon the publishers, Miss Wood and her committee.

According to the foreword, each recipe represents a favored contribution from leading dietitians in hospitals, colleges, schools, hotels, restaurants and industry; home economists employed in food departments of industrial organizations; hotel chefs; and other individual contributors. The assembled recipes were checked and re-tested before being submitted to the dietary staff of Mount Sinai Hospital where they were reviewed and duplications rejected. While the original content of each recipe has been edited in the interest of brevity and clarity, an effort has been made to maintain the individual character of each contribution.

Edith Barber's Cook Book. By Edith M. Barber, Editor of Food Column, New York *Sun*. New York: G. P. Putnam's Sons, 1940, pp. 524. Price $2.50.

One of the most pleasing features of this book is the friendly, chatty spirit that prevails throughout. The warmth and glow of the old-time kitchen seems to pervade the book despite the very modern efficiency of the methods detailed. Edith Barber has safely skirted the too stiffly starched and coldly scientific aspects of modern cookery. She talks of food as something to be enjoyed, fully as much as something to be examined for its vitamin content.

The book is really a complete guide to hospitality. The contents prepare you for practically every eventuality such as: a limited budget; life as a business-woman housekeeper; the various menu demands of modern entertaining; and that bane of most housekeepers, the unexpected guest. Miss Barber takes you gently by the hand and patiently teaches you how to be a fool-proof cook. She even helps you plan and outfit your kitchen. By the time you have delved into the chapter on appetizers, you and most other readers will not need to progress to the beverages before adopting Edith Barber and her cook book as a household friend and culinary mentor for life.

The 1300 recipes have been assembled with a keen discernment. The best of what might be termed the old and the new in American cookery and a generous blending of "imported" dishes make up the book's content. The ingredients and the methods have been so adapted as to present no obstacles to the average cook. The liberal use of cross references is another excellent feature. All this and the pleasing format and appetizing illustrations in color make this a leader among cook books.

Dietary of Health and Disease. By Gertrude I. Thomas, Assistant Professor of Dietetics, University of Minnesota. Third edition. Philadelphia: Lea & Febiger, 1940, pp. 317. Price $3.50.

Miss Thomas has designed her text book for the use of dietitians, nurses and instructors in the sciences pertaining to nutrition. It should be particularly useful in schools of nursing and departments of home economics for which it provides an intermediate text suitable as a basis of instruction. It presents concisely but comprehensively the fundamentals of food chemistry, food preparation and dietary management in those cases where modification of the normal diet is indicated. The book includes the findings of research in the vitamin field, the newer knowledge of food allergy, a discussion of nutrition as a factor in the care of mental cases, and assistance in the intelligent self-selection of food for individuals in various states of health. Vitamin charts are included with estimates of the vitamin unit content of normal and modified diets.

The following is quoted from the foreword by Dr. H. S. Diehl, dean of the medical sciences, University of Minnesota: "The susceptibility

of the public to the advertising of so-called health foods and the ready acceptance of one dietary fad after another give evidence of widespread interest in healthful diets. People everywhere want to know what an adequate diet should contain, how it may be obtained economically and how it may be presented in an attractive and appetizing manner. Upon the shoulders of the dietitian rests the responsibility for the dissemination of such information. Physicians and their patients alike turn to the dietitian to advise them about the content and the preparation of diets necessary for individual patients and for the treatment of special diseases. As an aid in meeting these sundry and important demands a book such as this one is invaluable."

Modern Diabetic Care. By Herbert Pollack, M.D. New York: Harcourt, Brace and Company, 1940, pp. 216. Price $2.00.

Diabetes is a disease of which it can be so truly said: "knowledge is power". And as Dr. Pollack adds, "to know diabetes is to control it." In this belief he has authored what is perhaps the most detailed handbook on diabetes written primarily for the patient. The first chapter, on the history of diabetes, is dramatically and lucidly presented. Those following: Diabetes—What is It? The Origin of Body Heat, The Body and its Food, and so on, proceed smoothly enough with the author carefully explaining and defining the more difficult points and terms. On the whole he succeeds most admirably in making a highly technical subject understandable to the average patient.

Particularly commendable are the chapters on Protamine Zinc Insulin: Its Properties and Behaviour, and that on the Technique of Handling Insulin. Another and unusual feature in such books is the excellent chapter entitled "Responsibility of the Physician in the Patient's Routine Check-up."

Part II, Diabetic Dietetics, is co-authored by Marie V. Krause, teaching dietitian at the New York Hospital. Here, "except in a comparatively few special cases", measuring rather than weighing foods is advocated. Calculation charts for the diet of those using unmodified and protamine zinc insulin (both adults and children at the several age levels), emergency diets, and food equivalents and substitutions are other helpful features.

Directory of Medical Specialists. Certified by American Boards. By Paul Titus, M.D. New York: Columbia University Press, 1940, pp. 1573. Price $5.00.

This is the only official directory listing the names, addresses, and biographic data of the more than 14,000 medical specialists certified to date by the American Boards, as authorized by the Advisory Board for Medical Specialties at its meeting in Chicago in February 1939.

The directory should be invaluable to doctors, both specialists and general practitioners, hospitals, social agencies, libraries, medical societies, and professional and business organizations. There is a complete alphabetic list of medical specialists, including addresses and indications of specialty certification, while in the geographic sections complete biographic information is given.

It should be emphasized, however, that for the present the omission of a given physician's name does not necessarily indicate, if he specializes, that he is not qualified to do so. It merely means that he has not as yet either sought or succeeded in obtaining certification.

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IN THE HOSPITAL OF TODAY where every kind of service is rendered to all classes of individuals, the science of nutrition has become an important factor. The type of food service that was adequate yesterday will not meet the needs of today; this is very largely the result of the rapid development of the hospital into a highly organized scientific institution. As an executive officer, the dietitian must be directly responsible to the superintendent. She must have sufficient authority for the proper administration and control of the entire general and scientific food services, and the nutrition education of patients, nurses, students and personnel, thus linking her with the four major departments of the hospital; namely, financial, medical, nursing and educational.—*Park, R. M., Unification of administration and control of food service under the dietary department, Hospitals, March, 1940.*

CURRENT LITERATURE

American Journal of Digestive Diseases

Vol. 7, March 1940

*The effect of various antacids on the hydrogen-ion concentration of the gastric contents. J. B. Kirsner and W. L. Palmer.—p. 85.

*Hypoglycemic reactions from protamine zinc insulin. W. L. Lowrie and D. P. Foster.—p. 101.

*Relationship of the diet to the self-regulatory defense mechanism. III. Organic acids and pectin. I. A. Manville and N. P. Sullivan.—p. 111.

*The emptying time of the normal stomach as influenced by acid and alkali with a review of the literature. E. J. Van Liere and C. K. Sleeth.—p. 118.

Vol. 7, April 1940

*Fecal residue of fat, protein and carbohydrate in the normal dog. R. J. Coffey, F. C. Mann and J. L. Bollman.—p. 141.

*The effect of the exclusion of bile on the absorption of foodstuffs. R. J. Coffey, F. C. Mann and J. L. Bollman.—p. 143.

*The influence of the pancreas on the utilization of foodstuffs. R. J. Coffey, F. C. Mann and J. L. Bollman.—p. 144.

*Substitution therapy in experimental pancreatic deficiency. R J. Coffey, F. C. Mann and J. L. Bollman.—p. 149.

*Role of food intake in the restoration of the liver following partial hepatectomy in albino rats. T. E. Machella, G. M. Higgins and F. C. Mann.—p. 152.

*Gastric emptying time and acidity in avitaminosis A in dogs. R. C. Herrin.—p. 164.

ANTACIDS AND GASTRIC CONTENTS. Gastric acidity is slightly and temporarily reduced by administration of food. The higher the protein and fat content of milk preparations, the greater the neutralization of acid. Calcium carbonate is the most effective neutralizer of gastric acidity. Combined with atropine or sodium bicarbonate it most completely controls gastric acidity. Effectiveness of atropine is due apparently to resultant diminution in volume of gastric secretion and prolongation of gastric emptying time. The influence of an antacid on gastric acidity depends not only upon its individual neutralizing capacity, but also upon the particular chemical reaction involved, the volume of gastric secretion, and the emptying time of the stomach.

HYPOGLYCEMIC REACTIONS. A study was made of hypoglycemic reactions in 89 patients who had taken both regular and protamine zinc insulin for at least 6 months. Fewer and milder reactions occurred with protamine than with regular insulin. The prevention, recognition and treatment of protamine zinc insulin hypoglycemia are discussed.

ORGANIC ACIDS AND PECTIN. Butyric acid has the greatest bacteriostatic effect of the organic acids present in the intestinal contents of animals fed fruit supplements. The bactericidal effect of apple in the intestine is not due to substances contained in the apple but to factors derived from the apple by enzymic action. Certain inorganic acids present may be effective. Pectin under certain conditions, such as an optimum *p*H, may exert an inhibitory or destructive effect upon bacterial growth.

EMPTYING TIME OF NORMAL STOMACH. Gastric emptying time was investigated in a series of healthy young adults, known to have hydrochloric acid in their fasting gastric juice. The standard test meal consisted of farina and barium sulfate. There was considerable variation, but the emptying time of any individual remained remarkably constant from day to day. A therapeutic dose of hydrochloric acid produced an average delay of 9% in the emptying time in 9 subjects. A therapeutic dose of sodium bicarbonate was followed by an average decrease of 16.3% in emptying time in 10 subjects.

FECAL RESIDUE. Utilization of foodstuffs by normal dogs was highly efficient: fecal excretion of fat varied from 2.11% to 3.99%, most of which was fatty acids; fecal nitrogen was found to be fairly constant in absolute amount except for a variation roughly proportional to bulk of feces. When calculated as percentage of protein in the diet, the nitrogen of feces increased in percentage as the amount of protein in the diet decreased. With diets low in protein as much as 50% of the nitrogen intake may be excreted in the feces. Carbohydrate excretion was only slightly affected by diet, varying from 1.0% to 3.0%.

EXCLUSION OF BILE ON FOODSTUFFS. When bile was excluded from the intestine of a dog there was a definite diminution of the absorption of fat. Carbohydrate utilization was not impaired. There was an increased loss of nitrogen

which was independent of the amount of protein in the diet, but proportional to the bulk of the feces.

PANCREAS ON UTILIZATION OF FOODSTUFFS. Following either complete pancreatectomy, production of a complete pancreatic fistula or evulsion of pancreatic ducts in dogs, there was marked loss of fat and carbohydrate in the feces. An increased excretion of fecal nitrogen was related to the increased bulk of the feces which was less when diets rich in protein were employed.

THERAPY IN PANCREATIC DEFICIENCY. Replacement therapy definitely reduced the loss of carbohydrate in the feces of animals after complete pancreatectomy or evulsion of pancreatic ducts when large amounts of carbohydrate (cracker meal) were included in the diet. Pancreatic juice, raw pancreas or pancreatin preparations appeared to be effective, but normal values of carbohydrate were obtained only when large amounts were given.

RESTORATION OF LIVER FOLLOWING HEPATECTOMY. There appears to be a correlation between the amount of food ingested and the degree of restoration of hepatic mass following partial hepatectomy. The loss in body weight of animals can be prevented by forced feeding. This effects a more rapid and greater degree of hepatic restoration and is probably due to an accumulation of fat in the hepatic cells.

GASTRIC EMPTYING TIME AND ACIDITY IN AVITAMINOSIS A. Free and total acidity of gastric juice and its rate of secretion in response to histamine was found to be about the same in 4 dogs during avitaminosis A as under vitamin A administration. Final gastric emptying time in 7 of 15 dogs was increased 28 to 124% in avitaminosis A. Anorexia in this deficiency is due to changes in the central nervous system.

American Journal of Diseases of Children

Vol. 59, March 1940

*Effects of natural and refined sugars on oral lactobacilli and caries among primitive Eskimos. D. B. Waugh and L. M. Waugh.—p. 483.

Vol. 59, April 1940

*Obesity in childhood. III. Physiologic and psychologic aspects of the food intake of obese children. H. Bruch.—p. 739.

*A study of 240 breast-fed and artificially fed infants in the St. Louis area. I. A comparison of prophylactic antirachitic effects of 135 and 200 unit irradiated evaporated milks, 200 unit irradiated fresh milk and human and nonirradiated evaporated milk fortified with 800 to 1000 units of vitamin D as viosterol. E. C. Robinson.—p. 816.

EFFECT OF SUGAR ON ESKIMO. Natural sugars do not initiate or cause an increase in the growth of oral lactobacilli in Eskimos. Neither do natural sugars initiate or cause an increase in dental caries. Refined sugar initiates and causes an increase in the growth of oral lactobacilli and also initiates and causes an increase in dental cavities.

OBESITY IN CHILDREN. Eating habits of 142 obese children were studied. The families of 80% of the children had recognized that the food intake was larger than average. Information concerning the emotional significance of food was obtained in the majority of cases. Most of the children had been exposed to prolonged overprotection, and they exhibited signs of immature behavior not only in their eating habits but in other respects. The efficacy of dietary restriction largely depended on the cooperation of the parents and the patient. The hypothesis is advanced that emotional experiences call into play functional disturbances of the hypothalmus which may be of importance in the large group of obese patients in whom no organic lesion can be detected.

BREAST AND ARTIFICIALLY FED INFANTS. Two hundred and forty healthy infants were divided into 8 feeding groups in which vitamin D was supplied from 5 different sources. Positive evidence of rickets was found in the roentgenograms in 33% of the cases. Breast-fed infants receiving 5 drops of viosterol in oil daily were protected against rickets but infants fed nonirradiated milk were not. In most cases rickets healed spontaneously without increase of vitamin D during the summer months.

American Journal of Public Health

Vol. 30, March 1940

*Epidemiological studies of tuberculosis. L. L. Lumsden and W. P. Dearing.—p. 219.

*The food value and economics of skim milk. J. S. Abbott.—p. 237.

*Microbiology of paper and paper-board for use in the food industry. F. W. Tanner, E. Wheaton and C. O. Ball.—p. 256.

*Skim milk—a neglected food.—p. 287.

TUBERCULOSIS. Findings suggest that some factor or set of factors of a general environmental nature such as may derive directly from the soil or the sunlight, operates importantly in the causation of the regional distribution of tuberculosis mortality in the southeastern section of the United States.

SKIM MILK. Almost 50 billion lb. of skim milk are fed to animals or destroyed each year. Skim milk is a by-product of sweet cream and butter but is not sold on the market because of popular prejudice against it. Such a use or misuse of this large quantity of skim milk, containing billions of pounds of the finest quality of human food nutrients known to man, constitutes a colossal social and economic waste. Ideal dietetics and economics would be the human consumption of this product as whole milk and whole milk cheese.

PAPER-BOARD IN FOOD INDUSTRY. Paper and paper-board made for use in the food packaging industries are sanitary products of a high order, made from clean, sanitary, raw materials by a procedure which entails several lethal steps: cooking, bleaching with chlorine, and hot drying rolls.

A NEGLECTED FOOD. The milk production of the United States is more than 100 billion lb. annually, of which between 46 and 50% is separated to obtain cream. Enormous quantities of casein from skim milk are used for sizing, paints, and various products like buttons, artificial ivory and brush backs, which instead should be made into cheese having the approximate food value of lean meat. There is a growing commercial use of the casein of milk for conversion into fiber closely resembling wool and having some advantages over wool in that it does not shrink so much and can be worn next to the most delicate skins. The fineness as well as the length of fiber can be regulated.

Annals of Internal Medicine

Vol. 13, March 1940

*Adenylic acid in human nutrition. T. D. Spies, W. B. Bean and R. W. White.—p. 1616.

*The problem of "rheumatism" and arthritis: Review of American and English literature for 1938. Part I. P. S. Hench, W. Bauer, M. H. Dawson, F. Hall, W. P. Holbrook, J. A. Key and C. McEwen.—p. 1655.

Vol. 13, April 1940

The problem of "rheumatism" and arthritis: Review of American and English literature for 1938. Part II. P. S. Hench, W. Bauer, M. H. Dawson, F. Hall, W. P. Holbrook, J. A. Key and C. McEwen.—p. 1837.

ADENYLIC ACID IN HUMAN NUTRITION. Some of the symptoms of mixed vitamin deficiency are relieved by adenylic acid; in some cases it may act in a manner similar to riboflavin in increasing the effectiveness of nicotinic acid in pellagrins in relapse. Findings give evidence of the multiple and mixed nature of these dietary deficiency diseases and suggest that they are the result of dysfunction of certain fundamentally related enzyme reactions. Because of severe reactions adenylic acid is not yet recommended for human beings.

"RHEUMATISM" AND ARTHRITIS. Vitamin C deficiency commonly exists in rheumatic fever both during active and quiescent stages. Whether it precedes and predisposes to the disease or is a result of it is not known. No notable effects from administration of vitamin C were reported. There is an increased need of vitamin C in rheumatic fever as in many other infections. Generous amounts of fruit juices or vitamin C supplements should be given.

Archives of Internal Medicine

Vol. 65, March 1940

Bright's disease: A review of recent literature. W. S. McCann.—p. 638.

Vol. 65, April 1940

Liver and biliary tract: A review for 1939. C. H. Greene and E. Farrell.—p. 847.

Bulletin of the Johns Hopkins Hospital

Vol. 66, March 1940

*The experimental production of cirrhosis of the liver by means of a deficient diet. A. R. Rich and J. D. Hamilton.—p. 185.

EXPERIMENTAL CIRRHOSIS OF THE LIVER. Cirrhosis of the liver occurred in all 14 rabbits kept from 25 to 113 days on diets supplemented by various vitamins but lacking yeast. Evidence indicates that the cirrhosis was due to lack of some factor contained in yeast other than vitamins B_1, B_2, B_6 and nicotinic acid. Microscopic, formed gallstones developed in the intrahepatic bile ducts in 2 animals.

Canadian Medical Journal

Vol. 42, March 1940

Child care during war. A. Brown.—p. 257.

Vol. 42, April 1940

*Diabetic coma. A. F. Fowler, E. H. Bensley and I. M. Rabinowitch.—p. 336.

DIABETIC COMA. A series of blood sugar curves demonstrates the different responses to treatment of diabetic coma with one simultaneous injection of 100 units of unmodified insulin intravenously and 100 units of unmodified insulin and 200 units of protamine zinc insulin subcutaneously. There is no need to fear hypoglycemic reactions when treatment also includes frequent carbohydrate feedings. Recovery is rapid and convalescence satisfactory.

Child

Vol. 4, March 1940

*White House Conference on Children in a Democracy: From the address of the President of the United States.—p. 223.

The White House Conference on Children in a Democracy. E. O. Lundberg.—p. 224.

*Agenda for a new decade; review of general report.—p. 229.

*New information on children in the coming census. R. J. Myers.—p. 247.

Vol. 4, April 1940

*The Pan American union and child welfare in the Americas. L. S. Rowe.—p. 255.

Progress in Pan American child-welfare work. K. F. Lenroot.—p. 256.

WHITE HOUSE CONFERENCE ON CHILDREN. The spirit within the home is the most important influence in the growth of the child. In family life the child should first learn confidence in his own powers, respect for the feelings and the rights of others, the feeling of security and mutual good will, and faith in God. Here he should find a common bond between the interests of the individual and the interests of the group.

AGENDA FOR A NEW DECADE. This is a review of the general report of the White House Conference on Children in a Democracy.

NEW INFORMATION ON CHILDREN IN CENSUS. The 1940 census will be the first in this country to record a decrease in number of children. The highest grade of school completed by each member of the population is the question which replaces the previous inquiry on literacy. The inquiry on present school attendance is more specific then the question in the last census. The new population census includes 4 questions regarding residence 5 years ago. New inquiries on employment represent a substantial improvement. The nation's first complete housing census will also be taken. An important by-product of the population census is the opportunity to check the completeness of birth registration throughout the United States.

PAN AMERICAN CHILDREN. The nations of the Americas have found in child welfare a fertile field for mutual interchange of experience and ideas. The Pan American Union is an active agent in the publication and distribution of research studies and current information on child-welfare problems and activities.

Hygeia

Vol. 18, March 1940

*That thyroid gland. P. A White.—p. 200.

*Saving your figure. C. R. Welsh.—p. 209.

*Milk bars. M. Dartnell.—p. 228.

*Cheese.—p. 243.

The food of the Irish. H. M. Fyler.—p. 246.

*The mental health of the child. S. B. Wortis.—p. 274.

Vol. 18, April 1940

Wonder stories of the human machine. G. A. Skinner.—p. 329.

Strengthening the staff of life. L. W. Nolte.—p. 336.

*Canned fish and sea food.—p. 346.

THYROID GLAND. The thyroid gland pours its products directly into the blood-stream. This secretion plays an important rôle in the production of heat and energy and is the intermediary between the oxygen breathed and the food substances absorbed in the tissues at the time of their combustion. If the thyroid gland fails to secrete enough, the person adds weight, often becomes mentally dull, and the heart is slowed down. His appetite is reduced, for the lessened activity requires less fuel for energy. When the thyroid gland secretes too much, it makes the person extremely nervous and excitable.

SAVING YOUR FIGURE. The pregnant woman can assure herself of her former good figure if she observes a few simple principles of posture. Suggestions for correct posture are accompanied by diagrams.

MILK BARS. A new style in "drinking" is sweeping the country. It is now smart to drink milk and beverages made with milk at a milk bar. These are springing up all over the country. The beverages are prepared with milk and various kinds of fruit, chocolate, maple or spiced sirups and are compounded before the customer's eye. All milk is pasteurized.

CHEESE. There are over 400 domestic and European varieties of cheeses. All except cottage and cream cheese are prepared by ripening the curd with special bacteria or molds. A pound of cheddar cheese represents the protein and fat of a gallon of milk. Cream cheese is made from cream with varying amounts of fat, the final product ranging from 37 to 45% fat, 45 to 55% water and 4 to 6% protein. Brands of cheese accepted by the Council on Foods of the American Medical Association are listed.

MENTAL HEALTH OF CHILD. The best insurance for the mental health of the child is a combination of physical health and a happy home. The most important formula that every successful parent must learn to keep, is that fine balance between love and a sense of security and at the same time sufficient freedom for action and experimentation to become self-reliant.

CANNED FISH. Salt water fish contain more minerals and iodine than fresh water fish. Canning is the most extensively used method of preserving in the United States. Salmon is the most important canned sea food. Canned tuna is usually packed in cottonseed oil. Accepted brands of fish and sea food are listed.

Journal of Biological Chemistry

Vol. 133, March 1940

*Properties of the filtrate factor of the vitamin B_2 complex, with evidence for its multiple nature. A. Mohammad, O. H. Emerson, G. A. Emerson and H. M. Evans.—p. 17.

*Antiketogenic and glycogenic activity of citric acid. E. M. MacKay, H. O. Carne and A. N. Wick.—p. 59.

*Basic amino acid content of human serum proteins. The influence of the ingestion of arginine on the composition of the serum proteins. R. J. Block.—p. 71.

*Mineral metabolism of rats on an extremely sodium-deficient diet. E. Orent-Keiles and E. V. McCollum.—p. 75.

*Anaphylactic shock and nitrogen metabolism in the dog. L. L. Miller.—p. 93.

*The distribution of ketone bodies in tissues. H. C. Harrison and C. N. H. Long.—p. 209.

Vol. 133, April 1940

*The conversion of palmitic acid into stearic and palmitoleic acids in rats. D. Stetten and R. Schoenheimer.—p. 329.

The effect of insulin on muscle respiration. F. J. Stare and C. A. Baumann.—p. 453.

*Blood sugar levels in rats receiving the cataractogenic sugars galactose and xylose. W. J. Darby and P. L. Day.—p. 503.

*Analyses of urinary protein and various fractions of human and pig serum protein. W. A. Murrill, W. D. Block and L. H. Newburgh.—p. 521.

*The failure of intravenously injected fat to produce cholic acid in the dog. R. W. Virtue and M. E. Doster-Virtue.—p. 573.

*The preservation of ascorbic acid in drawn samples of blood. R. J. Kassan and J. H. Roe.—p. 579.

FILTRATE FACTOR. Attempts to concentrate the rat filtrate factor resulted in a separation of 2 fractions, one extractable with diethyl ether and the other non-extractable. Cane molasses, an aqueous rice bran extract, and an alcoholic liver preparation appear to be good sources of both factors, but brewer's yeast, while a rich source of the growth factor, is low in the anti-graying factor; whole milk powder is low in its content of both factors.

ANTIKETOGENESIS AND GLYCOGENESIS. In the albino rat citric acid is as effective as glucose in the relief of insulin hypoglycemia, active in the formation of liver glycogen, and has a marked antiketogenic action.

EFFECT OF ARGININE ON SERUM PROTEINS. The arginine content of the serum proteins of 2 human subjects was not appreciably increased by the ingestion of relatively large quantities of arginine hydrochloride.

METABOLISM ON SODIUM-DEFICIENT DIET. The effects of a diet extremely deficient in sodium on the metabolism of the rat were studied over a period of 19 weeks. There was a continuous negative sodium balance. The calcium, phosphorus and chlorine metabolism did not seem to be affected. There was some indication of an increased retention of magnesium. Potassium showed marked retention. The nitrogen retention, although progressively decreasing till the 14th week, was positive. It then became negative simultaneously with the extreme

pathological changes of the eyes and the onset of rapid loss in weight.

ANAPHYLACTIC SHOCK AND NITROGEN METABOLISM. Anaphylactic shock in dogs results in increased urinary nitrogen excretion paralleling in severity the clinical symptoms of the anaphylactic shock. The increased creatine and uric acid excretion following anaphylactic shock suggests that both muscle and liver tissue undergo injury in anaphylactic shock.

KETONE BODIES IN TISSUES. Determinations of the distribution of ketone bodies between extracellular water and the cell water of rat liver and muscle have shown these tissues to be entirely different with respect to their metabolism of *b*-hydroxybutyric and acetoacetic acids. The ketogenic effects of fasting, anterior pituitary extract, and phlorhizin are due to their action upon the metabolism of the liver cell. As a result there is an increased ketone body production. Results indicate that ketones are utilized by the muscle cell.

PALMITIC ACID CONVERSION. Part of the palmitic acid fed to rats was degraded to acids of shorter chain length; another part was desaturated to palmitoleic acid. A novel reaction was the conversion of palmitic acid into stearic acid, representing a direct elongation of the carbon chain of palmitic acid by 2 carbon atoms.

BLOOD SUGAR AND CATARACT. Data are presented which show that when glucose, fructose, mannose, or arabinose constituted 35% of the diet given young rats the animals did not develop cataracts. Similar diets containing xylose or galactose were cataractogenic. Animals receiving the latter carbohydrates showed elevated blood sugar levels, but the degree of hyperglycemia bore no simple relationship to the rapidity of cataract formation.

URINARY AND SERUM PROTEINS. A comparative study of the composition of serum albumin, serum globulin, and urinary protein has been made by determining the sulfur, nitrogen, and various amino acids. The results indicate that urinary protein is either all serum albumin or is a mixture correctly represented by the albumin to globulin ratio as found in the urine. Two samples of urinary protein collected while the subject subsisted on different dietary régimes show identical analyses.

EFFECT OF FAT ON CHOLIC ACID. Bile fistual dogs were maintained for consecutive 3-day periods on a carbohydrate diet, on intravenously injected fat emulsions, and on a protein diet. Each type of food furnished 50 calories per kg. per day. The cholic acid excretion on the carbohydrate and fat régimes decreased steadily, whereas on the protein diet it rose to high values.

ASCORBIC ACID PRESERVATION IN BLOOD. If blood plasma is separated from the red cells and allowed to stand, its ascorbic acid content decreases. Intact red blood cells have a preservative effect upon the ascorbic acid of the plasma in which they are suspended.

Journal of Clinical Investigation

Vol. 19, March 1940

*Calcium and phosphorus metabolism in osteomalacia. IX. Metabolic behavior of infants fed on breast milk from mothers showing various states of vitamin D nutrition. S. H. Liu, H. I. Chu, C. C. Su, F. T. Yu and T. Y. Cheng.—p. 327.

*Calcium and phosphorus metabolism in osteomalacia. X. Further studies on vitamin D action: Early signs of depletion and effect of mineral doses. H. I. Chu, S. H. Liu, F. T. Yu, H. C. Hsu, T. J. Cheng and H. C. Chao.—p. 349.

*Urinary excretion of thiamin in clinical cases and the value of such analyses in the diagnosis of thiamin deficiency. W. D. Robinson, D. Melnick and H. Field, Jr.—p. 399.

*A study of sulfur metabolism and the effect of sulfur administration in chronic arthritis. R. H. Freyberg, W. D. Block, M. I. Fomer.—p. 423.

METABOLIC BEHAVIOR OF INFANTS. Calcium, phosphorus and nitrogen balances were studied on lactating women and their breast-fed infants. In the osteomalacic mothers, both mother and infant showed poor retention of calcium and phosphorus. After administration of vitamin D to the mother, the metabolic defects of the infant as well as the mother were corrected.

SIGNS OF VITAMIN D DEPLETION. In a study of a vitamin D deficient diet, both mothers and their infants showed a decrease of urinary calcium and an increase of fecal calcium, an increase in both urine and fecal phosphorus. The serum calcium and phosphorus were slightly

diminished. These metabolic changes were interpreted as evidence of vitamin D depletion.

URINARY EXCRETION OF THIAMIN. There is good correlation between the urinary thiamin values and the adequacy of the preceding diet with respect to this vitamin. Twenty-four hour urinary thiamin excretion of patients whose previous intake had been adequate was 90 micrograms or more in all males, and above 60 in all females but one, as contrasted to 66 or below in males and 43 or below in females who had previously had an inadequate thiamin intake. Subjects with adequate intake excreted more than 7.5% of an oral test dose of thiamin as compared with less than 7% in subjects with inadequate intake. Some patients with "alcoholic beriberi," cardiac decomposition, or clinical evidence of deficiency in other factors had urinary values indicative of thiamin subnutrition. Some patients with diabetes mellitus and some with hyperthyroidism showed normal excretion.

SULFUR IN ARTHRITIS. No evidence of sulfur deficiency or abnormality of sulfur metabolism was found in patients with arthritis as compared to normal persons. The data reveal no biochemical or metabolic indication of a need or benefit from sulfur medication in the treatment of arthritis.

Journal of Nutrition

Vol. 19, March 1940

*The effect of ferric chloride on the utilization of calcium and phosphorus in the animal body. P. Rehm and J. C. Winters.—p. 213.

*Investigation of the vitamin C content of Florida fruits and vegetables. I. Effects of maturation and of cold storage on the vitamin C potency of oranges and grapefruit. R. B. French and O. D. Abbott.—p. 223.

*Greying of fur and other disturbances in several species due to a vitamin deficiency. A. F. Morgan and H. D. Simms.—p. 233.

*Observations on the amount of ascorbic acid required to maintain tissue saturation in normal adults. E. N. Todhunter and R. C. Robbins.—p. 263.

*The independence of the endogenous and the exogenous metabolism of nitrogen. E. W. Borroughs, H. S. Burroughs and H. H. Mitchell.—p. 271.

*Effect of cooking upon the thiamin content of foods. E. Aughey and E. P. Daniel.—p. 285.

Vol. 19, April 1940

*Iron utilization in dogs on milk diets. D. V. Frost, C. A. Elvehjem and E. B. Hart.—p. 311.

*The anti-grey hair vitamin, a new factor in the vitamin B complex. G. Lunde and H. Kringstad.—p. 321.

*The cure of nutritional muscular dystrophy in the rabbit by alpha-tocopherol and its effect on creatine metabolism. C. G. Mackenzie and E. V. McCollum.—p. 345.

*The amino acids required for the complete replacement of endogenous losses in the adult rat. E. W. Burroughs, H. S. Burroughs and H. H. Mitchell.—p. 363.

*The retention of calcium and phosphorus by pre-school children. H. B. Pierce, R. G. Daggs, A. B. Meservey and W. J. Simcox.—p. 401.

UTILIZATION OF CALCIUM AND PHOSPHORUS. The amounts of total ash, calcium, and phosphorus in the bodies of animals on an unsupplemented diet were compared with amounts in bodies of animals on a diet supplemented with enough ferric chloride to combine with half the phosphorus of the diet. Addition of ferric chloride resulted in considerable reduction in total amounts of ash, calcium, and phosphorus at the end of 30 days. The food intake of all animals was approximately the same. In spite of this, animals on the unsupplemented diet gained more weight, and had larger amounts of calcium, phosphorus, and total ash deposited in their bodies at the end of the experimental period than animals with the ferric chloride supplement.

VITAMIN C IN CITRUS FRUITS. Differences in vitamin C content among samples of one variety and among different varieties of citrus fruit may be very large. Individual trees tend to produce fruit whose vitamin C content varies only within narrow limits. Changes in vitamin C content of oranges during maturation are not large. Variations in vitamin C content among oranges does not correlate with the different geographical locations in which they were grown. The vitamin C concentration of oranges and grapefruit may increase during the first few weeks of cold storage; the concentration then drops off slowly.

ANTI-GREY HAIR VITAMIN. Young black or hooded rats were fed a basal diet adequate except with respect to the B vitamins, and supplemented with thiamin chloride, riboflavin and a wheat germ preparation rich in vitamin B_6. The animals grew fairly well but developed a greying of the fur, usually in 6 to 10 weeks. Certain skin eruptions and in some cases persistent large skin ulcers appeared in many of the rats subsisting on this diet for several months. Filtrates from Fuller's earth-treated extracts

of rice, bran, yeast, liver, crude cane molasses and alfalfa in every case cured these symptoms but restored normal growth in varying degrees. Injection of commercial adrenal cortex and thyroid extracts cured the greying slowly but did not restore growth. One guinea-pig and 8 young dogs have also shown greying of the fur when subsisting on this deficient diet.

ASCORBIC ACID REQUIREMENT. Using a method for estimating the minimum intake of ascorbic acid required to maintain the tissues in a state of complete saturation as judged by urinary excretion of ascorbic acid, the requirement for 3 adult subjects was found to be from 1.6 to 1.7 mg. per kg. per day. The urinary excretion varied for the same individual even under carefully controlled conditions of ascorbic acid intake.

CONSTANCY OF ENDOGENOUS METABOLISM. Thirteen individual amino acids, including all of those considered essential for growth, 4 amino-acid mixtures, including one that proved adequate for the maintenance of nitrogen equilibrium in the adult rat, and one complete protein mixture of high biological value were tested. No evidence was obtained that the endogenous metabolism could be depressed.

THIAMIN LOSSES CAUSED BY COOKING. Thiamin losses due to different cooking procedures were determined by the rat-growth method for a representative variety of foods. Destruction amounted to as much as 22% in some vegetables boiled in water and additional amounts up to 15% dissolved in the cooking water. When cooking water is discarded total thiamin losses in vegetables may amount to approximately 20 to 35%. The addition of a small amount of sodium bicarbonate markedly increased the destruction of thiamin in green peas and snap beans but had no significant effect upon the thiamin content of boiled navy beans. Roasting caused a loss of 43% of the thaimin in pork loin, nearly 3 times as much as braising. Double boiler cooking of whole grain cereals did not destroy thiamin; baking bread caused about 15% loss. The relative values of the different cooked foods in meeting the daily human requirements for thiamin are discussed.

IRON UTILIZATION. The ratio of requirement of iron to copper in dogs is about 5 to 1. Even when supplied in small amounts, iron may be stored. Stored iron is available for hemoglobin formation only in the presence of copper. Further evidence has been obtained for the importance of cobalt in hematopoiesis in dogs on milk diets.

ANTI-GREY HAIR VITAMIN. In addition to the known members of the vitamin B complex, the rat also needs a growth factor B_w and another substance B_x to prevent and cure the greying of black hair. Factor B_x is present in yeast and liver in large amounts.

MUSCULAR DYSTROPHY. Nutritional muscular dystrophy in the rabbit resulting from a deficiency of a fat-soluble factor is cured by alpha-tocopherol. Continued administration of the vitamin prevents a recurrence of the disease even after acute cases.

AMINO ACIDS REQUIRED FOR ADULT RAT. The adult rat may be maintained in nitrogen equilibrium on a nitrogen supply containing only the following amino acids: threonine, isoleucine, tryptophane, valine, methionine, tyrosine and norleucine.

CALCIUM AND PHOSPHORUS RETENTION. A comparison has been made between milk and a fortified cereal as sources of calcium and phosphorus for preschool children. With the same basal diet the retention of calcium and phosphorus was determined when 200 mg. of calcium in the fortified cereal replaced 200 mg. of milk calcium. The children were in positive nitrogen balance throughout the study. In one period the storage of calcium and phosphorus was significantly better when these 2 elements were supplied in part by the fortified cereal rather than by milk, while in a second period of comparison the availability of calcium and phosphorus was the same.

Journal of Pediatrics

Vol. 16, March 1940

*Variations in the concentration of ascorbic acid in the plasma of the newborn infant. R. L. Mindlin.—p. 275.
*Vitamin A status of children as determined by dark adaptation. J. M. Lewis and C. Haig.—p. 285.
*Psychologic care of the preschool child. R M. Bakwin and H. Bakwin.—p. 357.

Vol. 16, April 1940

*Treatment of rickets and tetany by parenteral administration of one massive dose of vitamin D. H. Vollmer.—p. 419.

ASCORBIC ACID CONCENTRATION. The concentration of ascorbic acid in the plasma of the newborn infant at birth is greater than in the plasma of the mother. During the first 2 weeks of life this concentration varies directly and promptly with changes in the ascorbic acid content of the diet.

VITAMIN A STATUS. Dark adaptation tests revealed normal threshold values in all but one of 144 children ranging in age from 6 to 12 and suffering from a variety of diseases. This sole exception was a child who, because of abdominal pain, had been placed on a rigorous diet which was low in vitamin A. Administration of vitamin A or carotene in large doses brought the threshold to normal in less than an hour.

PSYCHOLOGIC CARE OF PRESCHOOL CHILD. The most important factor influencing the development of personality in early childhood is the attitude of the parents. Affection, overprotection, overindulgence, overanxiety, underaffection, overauthority, identification, perfectionism and parental incompatibility are attitudes which are discussed and treatment suggested. Sibling rivalry is very common. Suggestions for handling this situation are given.

MASSIVE DOSE OF VITAMIN D IN RICKETS. The harmlessness of a single dose of 600,000 units of vitamin D is demonstrated by its administration to 158 children in whom no toxic manifestations occurred.

Journal of the American Dental Association

Vol. 27, March 1940

*The role of sugar in the etiology of dental caries. P. Jay.—p. 393.

Vol. 27, April 1940

Relation of nutrition to dental caries; a review of recent findings. L. M. Fleisch.—p. 550.

ROLE OF SUGAR IN CARIES. Dental caries is not a manifestation of malnutrition and cannot be controlled by adding minerals and vitamins to high carbohydrate diets. The lactobacillus counts can be controlled and caries activity reduced by the restriction of carbohydrate in either adequate or inadequate diets. Adequacy of diet is of primary importance for normal growth and development and for the maintenance of good health. From the standpoint of dental caries activity, control of carbohydrate consumption is the only dietary procedure by which the disease can be controlled.

Journal of the American Medical Association

Vol. 114, March 16, 1940

*The use of vitamin B_1 for the relief of pain in varicose ulcers. A. Ochsner and M. C. Smith.—p. 947.

*Recovery in amyotrophic lateral sclerosis treated with tocopherols. I. S. Wechsler.—p. 948.

Vol. 114, March 23, 1940

Progress in the selenium problem. Current comment. —p. 1083.

Vol. 114, March 30, 1940

A hospital epidemic of Flexner dysentery caused by contaminated ice. E. J. Godfrey and M. A. Pond. —p. 1151.

Vol. 114, April 6, 1940

*The duration of remission in pernicious anemia with liver therapy. M. B. Strauss and F. J. Pohle.—p. 1318.

Dilantin sodium in the treatment of epilepsy. S. I. Frankel.—p. 1320.

Comparative effects of phenobarbital and dilantin sodium. L. J. Robinson and R. Osgood.—p. 1334.

*Correction of prothrombin deficiencies. W. D. Andrus and J. W. Lord.—p. 1336.

The drug therapy of epilepsy. W. G. Lennox.—p. 1347.

*The effect of quick freezing on the nutritive values of foods. M. S. Rose.—p. 1356.

Vol. 114, April 13, 1940

*Effective sterilization of eating utensils. Editorial. —p. 1455.

Vol. 114, April 20, 1940

New regulations on medicinal foods. Editorial.—p. 1559.

Vol. 114, April 27, 1940

*Possible role of ascorbic acid in animal tissues. Editorial. —p. 1668.

VARICOSE ULCERS. Of 10 patients with painful varicose ulcers and treated with vitamin B_1, all but one were definitely relieved and 8 had complete subsidence of their symptoms. In 2, the discontinuance of the vitamin resulted in the recurrence of pain in a milder form. This was promptly relieved when the vitamin was again administered.

RECOVERY IN SCLEROSIS. In one case of amyotrophic lateral sclerosis complete recovery was brought about by the administration of tocopherols, and in another case there was marked improvement. The administration of vitamin B may aid the vitamin E in treatment but causes no improvement when given alone.

REMISSION IN ANEMIA. Patients with pernicious anemia who require relatively little extract to maintain a normal blood level may relapse in as short a time as 2 months after liver therapy is omitted.

CORRECTION OF PROTHROMBIN DEFICIENCIES. The intramuscular injection of 2-methyl-1, 4-naphthoquinone dissolved in corn oil is a simple and effective means of restoring the plasma prothrombin level in the absence of severe liver damage. Single injections of as little as 2 mg. of this substance restore the level of plasma as much as 48%.

QUICK FREEZING OF FOODS. Quick freezing affords the consumer fresh material, free from inedible waste. Good quality, freshness, sanitary care, subjection to low temperatures as speedily as possible, holding at −17.8C or lower while in storage, in air-tight, water-proof package are essential conditions for the highest possible nutritive value. The number of microorganisms in foods is greatly reduced by quick freezing. Vitamins A, B_1, G and C are not affected appreciably by the quick-freezing process.

STERILIZATION OF EATING UTENSILS. Numerous organisms, such as hemolytic streptococci, pneumococci and diphtheria bacilli have been discovered on tableware and hand-washed dishes. A bacteriologic survey of public eating places in a Canadian town is summarized. Chlorine proved to be a simple and inexpensive sterilizing agent.

ROLE OF ASCORBIC ACID IN ANIMAL TISSUES. The concept of ascorbic acid functioning in animal tissues as a reversible oxidation-reduction carrier is supported by a variety of evidence. Experimental data does not confirm unequivocally the suggested rôle of vitamin C as a major respiratory carrier in animal tissue.

Pennsylvania Medical Journal

Vol. 43, March 1940

*Diabetic primer.—p. 841.

Vol. 43, April 1940

*The prevention, diagnosis, and immediate and remote treatment of the toxemias of late pregnancy. C. H. Peckam.—p. 909.

*The role of vitamin B_1 in nutrition. A. I. Rubenstone, D. Meranze and T. Meranze.—p. 930.

DIABETIC PRIMER. The physiology of diabetes mellitus together with the symptoms and diagnosis is discussed in this first of a series of articles which will be published by the Education Committee of the Commission on Diabetes of the Medical Society of the State of Pennsylvania.

TOXEMIAS OF PREGNANCY. A proper dietary throughout pregnancy will materially diminish the possibility of a complicating toxemia. An adequate diet for pregnant women is suggested. Meats are omitted but poultry, fish, cheese and eggs are given. Salt intake should not be excessive. A pregnancy gain of 20 pounds is ideal and should not be exceeded. In toxemias, the same diet may be used.

VITAMIN B_1. The American diet, in spite of being one of the best in the world, is still far from being optimum for full health. Slight impairment in health, due to vitamin B_1 deficiency, is difficult of recognition. Continued deficiency may be mistaken for nervous, cardiovascular, and digestive disturbances. During hospitalization, patients often ingest diets deficient in vitamin B_1. The vitamin B_1 content of the common foods is given. Several common diets are outlined, the vitamin B_1 content of which is inadequate in each instance.

Public Health Nursing

Vol. 32, April 1940

*Diabetes in the child. P. White.—p. 232.

*Nutrition as it relates to the eye. A. M. Yudkin.—p. 258.

DIABETES IN CHILDREN. The incidence of diabetes in childhood in contrast to adult life is low. The onset is often acute. Diabetes is transmitted as a recessive characteristic and can be prevented only by outbreeding.

NUTRITION AND EYE. The health of the eye as well as the general health of the body is affected

by diet deficiencies and by faulty nutrition. Night blindness, corneal lesions, lesions of the conjunctiva, vitamin C and vitamin G deficiency and cataract formation in animals are some of the topics discussed.

Public Health Reports

Vol. 55, March 22, 1940

*Using tests as a medium for health education. M. Derryberry and A. Weissman.—p. 485.

Vol. 55, March 29, 1940

*Housing and health relationships re-examined. B. Marquette.—p. 547.

Vol. 55, April 19, 1940

*Tularaemia.—p. 667.

TESTS FOR HEALTH EDUCATION. A technic for educating the public in health by means of testing and providing answers to test questions was developed as a by-product of a study conducted cooperatively by the American Museum of Health and the Public Health Service at the Medicine and Public Health Building at the New York World's Fair. It is an effective, simple, and inexpensive procedure applicable to other mass health education situations.

HOUSING AND HEALTH RELATIONSHIPS. The factors responsible for the production of disease, especially infectious disease, must be considered from 3 important angles: (a) predisposing causes which include, age, sex, habits, season, heredity, hygiene, climate, other diseases, poverty, and housing (b) exciting causes such as heat, cold, trauma and worry and (c) specific causes such as micro-organisms, viruses and toxins. Bad housing and bad environment are predisposing factors in the spread of disease. Examples of specific diseases in some measure attributable to bad housing are discussed.

TULARAEMIA. Hunters, vacationists, butchers, housewives, and laboratory workers who handle rabbits and other wild game are especially exposed to tularaemia. A wild rabbit should never be handled with bare hands. Rubber gloves, as long as they are impervious, afford excellent protection, but they are easily pierced by skinning knife or by fragments of bone and the wearer must be alert to avoid even the most inconspicuous skin prick.

Science

Vol. 91, March 8, 1940

*The possible identity of vitamin H with biotin and coenzyme R. P. Gyorgy, D. B. Melville, D. Burk and V. DuVigneaud.—p. 243.

Vol. 91, March 29, 1940

*Mobilization of vitamin A from its stores in the tissues by ethyl alcohol. S. W. Clausen, W. S. Baum, A. B. McCoord, J. O. Rydeen and B. B. Breese.—p. 318.

Vol. 91, April 5, 1940

Bisulfite binding substances and thiamin deficiency. M. Shils, H. G. Day and E. V. McCollum.—p. 341.

Vol. 91, April 19, 1940

*Tomato pumace in the diet. C. M. McCoy and S. E. Smith.—p. 388.

Vol. 91, April 26, 1940

*Factors affecting the insulin content of pancreas. R. E. Haist and C. H. Best.—p. 410.

VITAMIN H. It is suggested that vitamin H is identical with biotin and coenzyme R. Vitamin H functions in intermediate carbohydrate metabolism as do various members of the vitamin B complex.

MOBILIZATION OF VITAMIN A. Two normal dogs were given 60 ml. of ethyl alcohol in a 20% aqueous solution by stomach tube. They had not eaten for 24 hours. The vitamin A content of the serum showed a prompt increase, with maxima occurring at 7 and 24 hours.

TOMATO PUMACE. Tomato pumace is the term applied to the dried residues that remain after the preparation of tomato juice. Tomato pumace is a remarkably constant source of carotene, keeps well and has maintained the feces of dogs in good form for long periods of time.

FACTORS AFFECTING INSULIN CONTENT OF PANCREAS. Findings in rats suggest that the beta cells of the islets of Langerhans are "rested" by fat feeding, fasting and insulin administration.

INSTITUTION MANAGEMENT

American Restaurant Magazine

Vol. 24, March 1940

*Can you maintain an efficiency quotient in food production? L. Weaver.—p. 28.
*Here's a new menu thriller!—Boysenberry pie. M. B. Strause.—p. 31.
Air-conditioning—table d'hote or a la carte. T. F. Marshall.—p. 32.
*Some helpful hints for the menu maker. N. S. MacIntosh.—p. 34.
*Purchasing specifications and formula control for profit. S. Mallick.—p. 36.
*A food's-eye-view of a famous department store tearoom. L. D. Freeman.—p. 42.
*Good impressions—at six for a nickel. G L. Wenzel. —p. 44.
*New equipment for restaurants.—p. 56.

EFFICIENCY QUOTIENT. A graphic method of checking loss or waste at the various stages of food preparation and service that illustrates the value of definite buying specifications, controlled receiving, and careful preparation, cooking and serving. Includes tabulation of comparative yield studies on meats and vegetables.

BOYSENBERRY PIE. Describes the recently developed "Boysenberry," the result of crossing different varieties. This large, flavorful and practically seedless berry of recent years has become one of the major berry crops of California and the Pacific Northwest. Includes recipes for both canned and frosted forms.

MENUS. The problems encountered in preparing a menu are outlined by Mrs. MacIntosh of the Savarin restaurants, New York, including acceptable terminology, set-up and printing of menus, and trends in public eating habits as she has observed them.

SPECIFICATIONS AND CONTROL. Ishell's restaurants, Chicago, use a rigid formula control for profit, based upon definite purchasing specifications, standardized recipes, menu merchandising, standard portions control and menu pricing. For example, a short loin is not ordered as such, but as prime or top choice quality, 27–28 lb., pin bone cut short, half-dollar size, not trimmed too strong into flank, well marbled, bright cherry red meat, aged 3–4 weeks.

DEPARTMENT STORE TEAROOM. Menu variety and appeal, quality food carefully prepared, records of portions sold, job specifications for the hiring of workers and detailed instructions for the performance of their duties, are some of the controlled details outlined by Mrs. Mildred Bettel Johnson, manager of restaurants, Marshall Field & Company, Chicago.

IMPRESSIONS. Recommends standardizing portions of garnishes by use of soufflé cups. Charts give the portion size, number soufflé cup to use, unit for purchasing, portion yield, unit cost, and portion cost for preserves, pickles, olives, sauces, relishes, dressings, syrups and salad garnishes.

EQUIPMENT. The U. S. Slicing Machine Company has a new De Luxe Model GC slicer for all-round service of hot and cold meats, gelatin loaves, sausages, cheese, vegetables and bread.

Buildings & Building Management

Vol. 40, March 1940

*Water and water piping. W. J. Ryan.—p. 26.
*Modern floor coverings.—p. 30.
Case-studies in decorating.—R Green.—p. 38.
Yearly lamp bulb report. C. Isenbecker.—p. 41.

Vol. 40, April 1940

Effective tax limitation. A. A. Oles.—p. 19.
*Economics of adequate wiring. J. F. Schwegmann. —p. 24.
Water and water piping. W. J. Ryan.—p. 27.
Meeting fire emergencies. P. Bugbee.—p. 34.
Case-studies in decorating. S. Ware.—p. 40.

WATER SOFTENING. Both a chemical analysis of the water supply and the chemical constituents of water softeners must be known in order to select the softener most suitable in preventing hard scale deposits on heating surfaces and retarding corrosion. Both "external treatment" (softening water before it enters the boiler) and "internal treatment" (feeding chemicals into the boilers with the water) are used. Lists advantages and disadvantages of the zeolite softener and the lime-soda softener for external treatment, the conditions under which internal treatment is preferred to external, and the difference in action of the 2 classes of materials used—organic substances, such as tannin extract and cornstarch, and inorganic compounds, of which soda ash and sodium phosphates are the most useful. Cross sections of

an open feedwater heater and a "Deserator" are shown.

FLOOR COVERINGS. Detailed instructions for installation of various types of floor coverings must be rigidly followed as there is a reason for each recommendation the manufacturer makes for proper application of material under specified conditions. Specifications, installation, technic for lining felt, adhesives, lay-out and fitting, borders, rolling, runners and stair treads are specified, together with the proper temperature and ventilation essential during the installation of resilient floor coverings.

ILLUMINATION AND WIRING. Chart presents recommended foot-candles and approximate watts per square foot for various types of work, such as stenography, filing, desk work, etc. A typical one-line wiring diagram is shown and the wisdom of requiring that such a diagram be drawn for every major electrical installation and kept filed with noted changes is stressed.

Food Industries

Vol. 12, January 1940

*Definitions are not "standards of identity."—p. 32.
*Informative—not elaborate—labeling.—p. 32.
*How to use dextrose in canning. E. W. Eickelberg.—p. 33.
*Three methods for determining "foreign" matter in flour. B. L. Blumberg and C. W. Ballard.—p. 36.
*Fresh flavor assured by prompt freezing. R. E. Heyl and P. H. Tracy.—p. 39.
Aluminum labels and foils weaken bottle washing solutions. C. A. Shillinglaw and M. Levine.—p. 41.
*New bag preserves flavor with inert gas.—p. 42.
*Freezing makes beef tenderer. O. G. Hankins and R. L. Hiner.—p. 49.
*How to remove lead from maple sirup. A. Conlin.—p. 52.
Waste utilized to improve quality of product. H. Cloukey.—p. 54.
*Tentative United States standards for grades of dried prunes.—p. 55.
Demountable milk tank to cut Borden costs 16 per cent.—p. 59.
*Improved sweetening agent developed from cornstarch.—p. 62.
*New packages and products.—p. 63.
Paper milk container claimed to be success.—p. 66.
*Testing bottle washing solutions.—p. 88.
*Baking quality of wheat improves on storage.—p. 88.
*Sweetened cocoa powder soluble in cold milk—p. 90.
*Vitamin C losses in potato dehydration.—p. 90.
*Moisture and temperature affect quality of milling products.—p. 91.
Plumpness of ham indicates quality.—p. 92.

Vol. 12, March 1940

Quality control improved by research methods. M. E. Parker.—p. 41.
*How one sugar compares with another. S. Jordan.—p. 45.
*Performance data determined for new food freezing plant—Part II. W. J. Finnegan.—p. 48.
How to make dill pickles. W. G. Wormley.—p. 50.
*Technology's effect on food and packaging. I. C. Miller.—p. 53.
Good packaging demands proper use of adhesives—part I. J. P. Langwill.—p. 55.
The product comes first in successful packaging. C. B. Pape.—p. 58.
*Germicidal properties of hot paraffin—part I. F. W. Tanner and H. F. Lewis.—p 60.
*Fats and oils battle for food industries market—part II. G. W. McBride.—p. 70.
*Short-time pasteurization as it looks to the milk plant operator—part II. W. D. Dotterer.—p. 74.
Water vapor permeability of wrapping materials.—p. 96.
*Wrapping papers for frozen foods.—p. 96
*High conversion corn sirup in jellies, jams, fruit butters.—p. 97.
*Causes of cheesy butter.—p. 98.
*How to preserve bloom in frozen poultry.—p. 99.
*Factors affecting drip in defrosted beef.—p. 100.
Vitamin B_1 in American staple foods.—p. 100.

Vol. 12, April 1940

Sixteen things that can go wrong with air conditioning. C. I. Elliott.—p. 39.
*Clearing up the confusion about sugar sirups. L. Wickenden.—p. 42.
*Wartime control troubles British food manufacturers. H. B. Cronshaw.—p. 44.
Short time pasteurization of milk as it looks to the health officer. F. M. Keller.—p. 48.
*A new day in fat frying. W. E. Broeg.—p. 51.
*Cake baking.—p. 53.
How foods are frozen in the Northwest. F. W. Knowles.—p. 54.
Germicidal properties of hot paraffin—part II. F. W. Tanner and H. F. Lewis.—p. 57.
Taking the guesswork out of pasteurizing. C. S. Pederson and E. A. Beavens.—p. 61.
*Aluminum food containers.—p. 92.
Advantages of cooked flavor in milk.—p. 94.
*Preserving cream with salt.—p. 94.
*Gelatine and sodium alginate to stabilize ice cream.—p. 94.
*Freezing increases salt uptake in fish.—p. 95.
Smoke, flash and fire points of soybean oil.—p. 95.
Butter versus vegetable oils.—p. 95.
Lactic acid for pickles.—p. 96.
*Formulas for foods.—p. 98.

DEFINITIONS VS. STANDARDS. A discussion of the difference between definitions and "standards of identity" as used in the new food law.

INFORMATIVE LABELING. Over-labeling results in confusion of consumer. Clear, concise statements of important facts about a product prove

most useful. Study made jointly by the Department of Agriculture and W.P.A. on this subject dealing with blankets, sheets, bath towels, and other textile products throws light on food labeling.

DEXTROSE IN CANNING. Dextrose lawfully became a substitute for sucrose in canning in 1930. Prejudice prevails because of discoloration of food canned with dextrose. Thorough research has recently disclosed this cause as due to p_H concentration of the food. Increase in flavor and palatability favors use of dextrose if scientifically used.

INSECTS IN FLOUR. In order to prevent insect development in flour and cereal products on storage, careful tests for insect eggs and excreta should be made by the miller. Four chemical and physical tests for contamination are fully discussed.

ICE CREAM QUALITY. Ice cream frozen while products are fresh and immediately after processing retains its fine flavor over a longer period of time. Overrun is increased with aging. Five tables illustrate variations between aged and fresh mixes in relation to ingredients, freezing speed, and sequence and time of processes and aging periods.

COFFEE FLAVOR RETAINED. Pliofilm bags have increased sales 300% and reduced flavor deterioration of coffee from 18 to 172 days. In packing the coffee the air in the container is displaced with inert gas, thus excluding oxygen; the Pliofilm lining keeps air and moisture from passing into or out of bag.

TENDERIZING BEEF. Storage at below zero temperatures (−10° to −40°F.) has caused improved tenderness in the beef carcasses. Gives temperatures at which steak was frozen and resulting degree of tenderness.

LEAD REMOVAL FROM MAPLE SIRUP. Due to contact with lead surfaces some sirup contains large quantities of lead. Treatment with disodium phosphate has produced successful results. This treatment may also prove useful with other liquids.

U. S. GRADES OF PRUNES. Tentative standards for the 4 U. S. grades of dried prunes which became effective on September 11, 1939, are presented. Definition of terms is included.

SWEETOSE. Sweetose, a new syrup made from corn by carrying the hydrolysis of starch beyond the stage previously practicable, is twice as sweet and about ½ as viscous as corn syrup, and will not crystallize. It is proving valuable in manufacture of sweetened condensed milk, ice cream, bakery products, jams, jellies, preserves, canned fruits, tomato catsup, table syrups and candies.

NEW PRODUCTS. Canned rice, ready to serve, and packaged dried vegetables for soups are now available to consumers.

BOTTLE WASHING. Sterility of bottles is dependent upon correct temperature of water, strength of cleaning solution and soaking time. The temperature and time are readily regulated. Of the 3 methods now widely used for determining germicidal power in cleaning solutions, only the tests for total causticity meet all requirements.

STORAGE EFFECT ON WHEAT. Average germinating of wheat improves with storage, maximum being reached approximately 3½ months after harvesting. Best bread is produced when wheat is 3 months old, coinciding with maximum dough absorption and greatest germinating capacity.

COCOA POWDER. A sweetened cocoa powder which is soluble in cold milk is now on the market. Complete description of preparation is presented.

VITAMIN C AND POTATOES. Due to dehydration process, dried potatoes lose much of their vitamin C.

WHEAT. Temperature affects the chemical composition and moisture affects physical composition of wheat in the milling processes. Moisture absorption increases with temperature increase.

SUGARS. Compares the properties of the different types of sugar used as ingredients in

processed foods. Sugars vary in sweetness, solubility, caloric values, viscosity, and osmotic pressure. The article details the comparative qualities of monosaccharides, disaccharides, and polysaccharides.

QUICK FREEZING. Operating data on freezing and innovations and principles which contribute to economy and high quality in freezing. The major factors considered in the design of the Dulany freezing plant were sanitation, food quality, flexibility, and economical operation.

FOOD AND PACKAGING. Technical developments in food processing have often opened up new fields for both new and old package materials. Both transparent cellulose and polymerized rubber have created new package opportunities for food manufacturers. Includes illustrations of improved packages developed through technological findings.

PARAFFIN. Discusses the sanitary qualities of paraffined paper containers as well as listing the characteristics of paraffin wax which make it a suitable covering for food containers. Paraffin contributes to rigidity and strength; improves appearance and gives a brilliant finish; makes a hermetic seal possible; is free from odor, color, and taste; is almost inert to bacterial attack; is free from microorganisms; makes a waterproof container; and is an important agent in producing a sterile food container.

FATS AND OILS. Deals with the many economic, technical and political factors that affect the price and availability of various fats and oils, chiefly butter, margarine, lard and manufactured shortening.

SHORT-TIME PASTEURIZATION. Gives the results of tests carried out to compare the familiar 30-minute holding-period method of pasteurization with the newer continuous, time and space saving short-time method. The 30-minute holding treatment has been found to be more effective in killing heat resistant bacteria than the short-time method.

WRAPPING PAPERS FOR FROZEN FOODS. Suitable papers or other wrapping materials will protect frozen foods from drying out and from contamination while in storage. Wrapping materials with low moisture transmission prolongs the period before the fat becomes rancid. Gives a list of materials considered satisfactory for use in packaging foods for storage in lockers.

CORN SIRUP. Jellies, jams, and fruit butters made with high conversion corn sirup were found to have improved texture over those made with ordinary corn sirup with a sweetness of about three-fourths that of sucrose jellies.

CHEESEY BUTTER. Print butter is more apt to become cheesy than tub butter, the cheesy flavor developing from the water used to wash the butter. Some printing machines have a reworking action on the butter, and this redistributes the contaminating water through the mass and the cheesy flavor follows. The only remedy is to chlorinate the whole water supply.

PRESERVING BLOOM IN FROZEN POULTRY. The loss of bloom or fresh appearance in frozen poultry is practically proportional to the extent of evaporation. High humidities at low temperatures tend to preserve the fresh appearance of the poultry.

DEFROSTED BEEF. Small steaks, rapidly frozen, retain the fluid longer when defrosted since intrafiber freezing occurs at low freezing temperatures. Slow freezing at higher temperatures leads to extrafiber freezing, subsequently releasing the meat juice more readily on defrosting.

SUGAR SIRUPS. The properties of invert sugar, the characteristics of sugar sirups, processes of manufacture and popular misconceptions are explained.

WARTIME CONTROL. The effect on British food manufacturers of wartime control with the Ministry of Food the sole purchaser of raw sugar, meats, and other essential commodities is discussed.

FAT FRYING. Points out the need for a closer tie-up between the manufacturers of shortening and equipment, since efforts directed toward getting a maximum of fried foods with a minimum of fat consumption requires manufacturers of fat frying equipment to standardize temperatures for preparation of specific foods.

CAKE. An illustrated flow sheet for the production of cake from the receiving of ingredients to the completion of the product.

ALUMINUM CONTAINERS. Aluminum, light in weight, corrosion resisting, and easily recovered for re-use, has been found to be better than tinned containers for milk and also for wrapping butter because it is inert to oils and acids.

PRESERVING CREAM. The addition of 7% common salt when churning cream lessens development of acidity and growth of bacteria causing rancidity and cheese flavors; butter made from salted cream scores 1 point more in flavor than that from unsalted.

ICE CREAM. Sodium alginate added to ice cream mix at 160 degrees F. stabilizes the ice cream, gives it a smooth appearance, gives no off odors or flavors and results in a product which melts more rapidly at room temperature than that made with gelatin.

FROZEN FISH. Because freezing increases the permeability of the muscle, salt is absorbed more readily when freezing fish but for the same reason the salt is also given up more readily in cooking. Because of marked variation in the behavior of each kind of fish, it is necessary to develop processes for each variety.

FOOD FORMULAS. Formulas are given for chocolate fudge icing, fresh farmer sausage, vanilla icing, caramel fudge sauce, frankfurters, stollen, Worcestershire sauce, a master sweet dough mix, and also for iron removal from fruit peels so that they will not discolor.

Horwath Hotel Accountant

Vol. 20, March 1940

*Food and beverage costs.—p. 3.
*College dining rooms.—p. 4.
*Pricing meat cuts.—p. 4.
Small hotels without restaurants.—p. 5.
*Department store restaurants.—p. 7.

FOOD COSTS. The total food costs per dollar sale in December, 1939, were 2% lower than for the corresponding month of 1938.

COLLEGE DINING ROOMS. An analysis of operation of the dining rooms of a large college for a full year showed a total net profit of 15.69% with an average net profit per meal of $.048. Greatest percentage profit occurred in January with 32.04% and greatest percentage loss occurred in August with a loss of 38.38%. In analyzing the figures, allowances must be made for the fact that there is no charge for rent and charges for replacements, electricity, gas, oil, and water are lower than in commercial restaurants. Food cost was 42.28%; salaries and wages, 30.07% ratio to total sales; the average cost of food per meal in dining halls, $.131, banquets and parties, $.216 and the average cost of payroll per meal $.092 and of other expenses per meal $.034.

COST OF MEAT CUTS. In determining the relative value of meat cuts, the following 3 steps have been found to be the best: keep exact records of butchering results to determine weights of individual cuts from carcass; calculate values of individual cuts by applying against them the market prices that would be paid if they were purchased separately; compute the saving that results from a purchase of a carcass instead of separate cuts and distribute to the individual parts. Illustrative tabulations are given for lamb racks, saddle, legs and forequarters.

DEPARTMENT STORE RESTAURANTS. Chart giving ratios of direct operating expenses in the restaurants of a large department store based upon a full year's operation shows a profit before charging general overhead expenses, such as rent, light, heat, water, etc., of 20.85% for tea room, 28.54% for luncheonette, and 34.90% for soda fountain. The classification of expenses differs from that of the regular commercial restaurant.

Hospitals

Vol. 14, March 1940

*Unification of administration and control of food service under the dietary department. R. M. Park.—p. 98.

Vol. 14, April 1940

*Services of American and European hospitals. A. S. Baillieu.—p. 112.

FOOD SERVICE. The dietitian should be directly responsible to the superintendent for the successful administration and control of her department. The food dollar is more wisely spent if the dietitian is well informed on pur-

chasing, preparation, and distribution of food. Major interests of a dietitian should include personnel management and nutrition education. Qualifications of a dietitian are described as they affect efficient dietary management.

AMERICAN AND EUROPEAN HOSPITALS. The fourth of a series of articles on Great Britain, American and European hospitals gives detailed information with regard to the facilities and services of the Los Angeles County Hospital, Rancho los Amigos and Olive View, California.

Hospital Management

Vol. 49, February 1940

*Convalescent home has classes in nutrition for both children and parents. C. Koch.—p. 40.
Some thoughts on cooking lamb. I. S. Willson.—p. 42

Vol. 49, March 1940

*Pork cookery. I. S. Willson.—p. 49.
General menus for April.—p. 52.

NUTRITION CLASSES. Through the educational program at the Children's Convalescent Home, Cincinnati, good health habits and proper nutrition are taught to the children and their parents by use of illustrative material, lantern slides, and white rat experiments. Practical instruction in the principles of nutrition, actual preparation of food, and field trips are included.

PORK COOKERY. Fresh pork must be thoroughly cooked; it must be well done to the very center. The best way to secure this result, according to Inez S. Willson, is to roast it a relatively long time at a moderately low temperature. Suggestions on the preparation of pork cuts with recipes for roasting and braising are given.

Hotel Monthly

Vol. 48, February 1940

*A streamlined dining car kitchen.—p. 24.
*100 years of menu making.—p. 25.
*Housekeeper's primer. Chapter 5. Cleaning—the basis of all good housekeeping. J. C. Van Ness.—p. 29.
*Hotel women discuss linen room operation and linen control.—p. 31.
Fire insurance problems. J. B. Johnson.—p. 35.

Vol. 48, March 1940

*At home in the Sherry-Netherland hotel.—p. 13.
*"——— and so, we built this coffee shop ———".—p. 29.
*Hotel training school in San Francisco.—p. 36.
*Rules for making good coffee. G. C. Thierlach.—p. 38.
100 years of menu making.—p. 40.
Food checking in the smaller restaurant.—p. 42.
*Housekeeper's primer. J. C. Van Ness.—p. 45.
*The coffee shop. E. Boles.—p. 51.

DINING CAR KITCHEN. Preparation and service of meals comparable to those of a first-class hotel have been accomplished by the Rock Island Railroad dining car department on the road's streamlined Rocket trains operating between Chicago and Colorado points. A kitchen plan and photograph give a good idea of lay-out and furnishings.

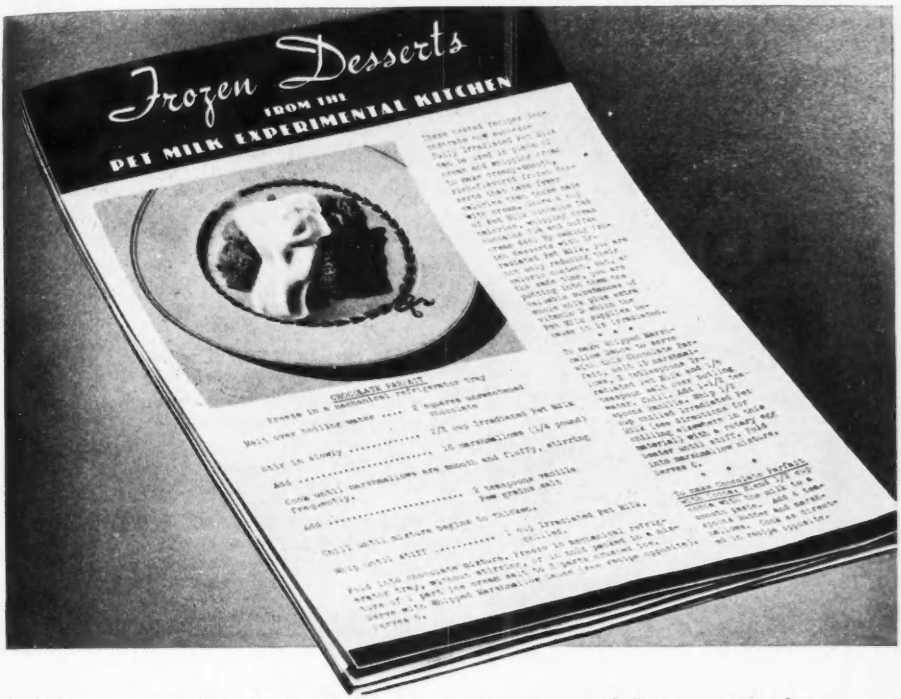
MENU MAKING. One of a series of articles presenting menus selected from the Arnold Shircliffe collection which shows the changing eating habits of people in the United States, and the foods served in public eating places from 1839 to now. This article reproduces menus from 1878 to 1900.

HOUSEKEEPER'S PRIMER. These rules are recommended for institutional cleaning: standardize on equipment, cleaning agent and method; instruct workers as to procedure; and inspect all work rigidly, thereby maintaining a high standard of performance. Instructions are given for cleaning various surfaces and pieces of equipment.

LINEN CONTROL. In a round table discussion of linen room operation and linen control of the Hotel Women's Association, all agreed that inventory is an important task, perpetual inventory being preferred. Recommendations are given for methods of better linen room control and for the use of worn-out linen.

SHERRY-NETHERLAND. Controlled dining room service to secure customer satisfaction includes the posting of a list of preferences of each hotel guest so that waiters may cater to them accordingly.

LAYOUT. The Castle Hotel, Omaha, has opened a new coffee shop the architectural treatment, decoration and equipment of which make it one of the outstanding rooms of its size in the country. Arrangement permits the coffee shop to be self-sufficient at odd hours and independent of the main kitchen except for dishwashing. Menu is sufficiently extensive to attract volume



FINE textured, fine flavored frozen desserts and velvety smooth sauces to serve over them can be made from the tested recipes in the varied collection, entitled, "Frozen Desserts from the Pet Milk Experimental Kitchen," which has been created for teachers to distribute to their students.

Some of the desserts, using whipped Pet Milk in place of whipping cream, are to be made in a mechanical refrigerator. Others, using Pet Milk in place of coffee cream and milk, are to be made in a hand-turned freezer. All of them are more wholesome and less expensive than such desserts made with whipping cream, coffee cream and ordinary milk.

These frozen desserts and sauces are more wholesome because they contain an extra large amount of the much-needed whole milk, as well as extra vitamin D. They cost less because Irradiated Pet Milk is much less expensive than whipping cream or coffee cream. It costs less generally than ordinary milk.

PET MILK COMPANY, 1450f Arcade Building, St. Louis, Missouri

Please send me *free of charge* _____ copies of "Frozen Desserts."

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at meal times and sufficiently specialized to attract patronage between meals and at night.

HOTEL TRAINING. San Francisco Junior College offers a 2-year hotel training course for high school graduates. Laboratory and class work include menu planning, purchasing, food preparation, details of operation and service, food cost accounting, bookkeeping, and cashiering taught by experts in each line.

COFFEE MAKING. R. C. Thierlach of the Promotion Committee of Associated Coffee Industries gives 5 rules for good coffee.

HOUSEKEEPER. States the responsibility of the housekeeper to the manager, the front office, the auditor, the catering manager, the engineer, the bell captain, outside workers, guests, and employees.

COFFEE SHOP. Suggestions for utilizing surplus inexpensive meat cuts include recipes for sausage patties, corned beef, veal loaf, casserole of neck, lamb chops, and julienne of beef.

Journal of Home Economics

Vol. 32, March 1940

Standards and specifications for food service equipment. A. Janzen.—p. 155.
School-lunch conference. M. S. Ehlers.—p. 166.
*Home economics in government services.—p. 169.

Vol. 32, April 1940

Home economics in the Canadian youth training program, especially at the University of Manitoba. G. G. Hood.—p. 219.
New developments in supervised homemaker-housekeeper service. E. R. Woldman.—p. 237.
*The executive secretary.—p. 243.
Medical technologists for Red Cross reserves.—p. 244.
*Workers in social welfare and public health.—p. 245.
*Effect of storage on vitamin A content of canned tomatoes. P. P. Swanson, G. Stevenson, and P. M. Nelson.—p. 246.

HOME ECONOMICS IN GOVERNMENT. Home economics trained women find government opportunities in research, extension, rural home management, public welfare and health, institutional administration in dietetics and public housing.

EXECUTIVE SECRETARY. A tribute to Katharine McFarland Ansley, executive secretary of the American Home Economics Association, who left in March to assume the management of the Commons at the University of Illinois.

DIRECTORY. A directory of all home economists and nutritionists affiliated with social welfare and public health agencies throughout the country is being compiled by the Department of Social Welfare and Public Health of the American Home Economics Association. Address any changes of address or requests to Helen Stacey, Henry Street Visiting Nurse Service, 262 Madison Avenue, New York.

VITAMIN A IN CANNED TOMATOES. Research on the effect of length of storage of canned tomatoes upon vitamin A efficiency proves that there is no reduction in efficiency in 42 months.

Modern Hospital

Vol. 54, March 1940

*New kitchens for old. H. C. MacLean.—p. 98.
"Styles" in beef. A. Wood.—p. 100.
Food cost tables—beans. G. S. Saunders.—p. 102.

Vol. 54, April 1940

Basement dining rooms.—p. 69.
*Duties of dietitian-housekeeper. M. MacLachlan.—p. 90.
"The salad, please."—p. 91.
Food cost tables—staples. G. S. Saunders.—p. 94.
May menus for the small hospital. L. Weher.—p. 96.

NEW KITCHENS FOR OLD. Memorial Hospital, Worcester, Massachusetts, completely remodelled the kitchens by the rearrangement of wall sections and the installation of much needed new equipment.

DUTIES OF DIETITIAN-HOUSEKEEPER. Mable MacLachlan describes the three principal duties of her department: purchasing, preparation and service of food to patients and personnel; supervision of the therapeutic diets; and the management of the housekeeping department. Well-organized schedules of work for the dietitian and her employees, and the standardization of all equipment and supplies keep the departments running smoothly.

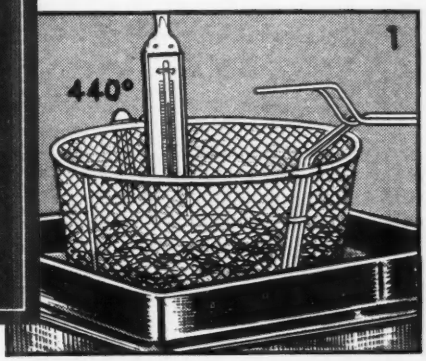
Nation's Schools

Vol. 25, March 1940

*Off to a good start. M. L. Cronan.—p. 72.
*Figuring food costs rapidly. G. S. Saunders.—p. 76.

FOOD HABITS. Marion L. Cronan of a Lexington, Kentucky, school cafeteria serving 1252

2 tests of a *heavy-duty* shortening –



1—FRYING. A *Heavy-duty* shortening should have a high smoking point. *Heavy-duty* MFB has a smoking point of about 440° F.— far beyond the necessary frying heat.

2—CREAMING. A *Heavy-duty* shortening should pick up air quickly and hold volume through long severe beating. *Heavy-duty* MFB meets this requirement.

•

Heavy-duty MFB was named for its ability to meet the heavy-duty demands of machine operations that *punish* shortening.

Modern frying kettles are thermostatically controlled to maintain constant high temperatures—*heat punishes*. New formulas demand fast mixing speed—*speed punishes*. Creamed icings get long and severe beating—*creaming punishes*. But new *heavy-duty* MFB can "take it" all three ways. At the same time, this fine bland shortening is also delicate enough to incorporate itself into icings that melt in your mouth.

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tells how pupils are instructed in good food habits. The use of foods significant to the growing child is promoted by serving certain specials.

COST CONTROL. Tabulations for the costs of peas, frosted, fresh, and canned, illustrate the use of detailed charts for figuring portion costs accurately in order to determine the most economical purchase.

Personnel Journal

Vol. 18, January 1940

*Sizing up job applicants. E. N. Hay.—p. 258.
*Common fallacies in employee ratings. J. H. Pockrass.—p. 262.

Vol. 18, February 1940

Survey of hiring methods.—p. 284.
Personnel work in state hospitals. P. Worchel.—p. 292.
*Constructive proposals regarding older workers. G. Lawton.—p. 300.
The society for personnel administration. R. W. Cooper.—p. 309.

Vol. 18, March 1940

Studies in cooperation. S. A. Courtis.—p. 314.
*Aptitude testing. C. A. Drake.—p. 340.
Manual for executives and foremen. E. H. Schell and F. F. Gilmore.—p. 348.

ANALYZING APPLICANTS. An applicant's work experiences, personality, background, education, interests and mental and physical abilities are determined in a 4-hour interview through the filling in of personnel forms, taking mental and job tests, medical examination and several personal interviews. Only 16 out of 700 employees hired by this method have proved unsatisfactory. Importance of ascertaining these factors increases according to the difficulty and importance of the position to be filled.

EMPLOYEE RATINGS. Proper consideration has not been paid to the errors in interpreting employee ratings. These ratings should serve as stimuli for employee development. Periodic ratings followed by frank discussion of employee faults will develop strength and lessen weaknesses in employees.

OLDER WORKERS. A carefully worked-out program recommended for the testing and reappraisal of older workers in relation to their jobs, to be carried out by means of staggered tests that should result in a smaller number of unemployed older workers.

APTITUDE TESTING. At the present time aptitude testing is not always successful because inappropriate tests are used or improper technics employed in giving the tests. Aptitude tests, to be successful, should be designed to fit the requirements for the job as revealed by adequate psychological job analyses. They should be tests which can be quickly administered and scored by the regular staff and the results capable of being interpreted without regression weightings and coefficients of correlation.

Practical Home Economics

Vol. 18, March 1940

*For a healthier tomorrow. F. L. Hoag.—p. 78.

Vol. 18, April 1940

*Aims and purpose of school feeding. W. B. Lee.—p. 113.

FOR A HEALTHIER TOMORROW. One method suggested for correcting poor food habits among school children is to offer a plate or tray luncheon combination including those elements essential to growth and health. With the cooperation of all departments, graphic displays and posters can be made to show school children exactly what they are getting and to enable them to see the exact value of each plate combination in relation to their own interests and needs.

SCHOOL FEEDING. There is a great educational opportunity in the correlation of classroom teaching with practice in the cafeteria. Another function of the cafeteria in the educational program of the school is to interest the public in the school food service through demonstrating the importance of meeting the nutritional needs of the children.

Restaurant Management

Vol. 46, March 1940

*Table of equivalents for baking. L. P. De Gouy.—p. 6.
The milky way to meals. J. R. Shutts.—p. 14.
*What! Profits from main dining room?—p. 16.
Good food is his hobby. A. E. Holden.—p. 23.
*How to sell hot foods hot.—p. 25.
*How much health education will guests take?—p. 26.
*Chart of oranges—lemons—limes—kumquats.—p. 31.
*500 ways to cut food costs (Number 4). J. B. O'Keefe.—p. 32.
*Roger Smith Company food specifications, weights, etc.—p. 40.
*Chart of American prunes.—p. 43.
*Plum chart.—p. 44.

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Vol. 46, April 1940

Cooking time and temperature.—p. 6.
Louis P. De Gouy's good food hints.—p. 10.
How to know flour.—p. 12.
Before going on duty.—p. 14.
*Strawberry chart.—p. 24.
*Chart of canned apples.—p. 25.
*500 ways to cut food costs. Number 5. J. B. O'Keefe.—p. 27.
*Food preservation at the Hotel Olympic.—p. 28.
Stop those losses!—p. 29.
*Recipes.—p. 32.
*Air-conditioning profits. M. H. Mighell.—p. 33.

BAKING EQUIVALENTS. A table listing the ingredients commonly used in baking and the equivalent weight in ounces for a teaspoon, a tablespoon, ¼ cup, ½ cup, ¾ cup, and 1 cup. Also listed is the number of cups per pound of a given ingredient, or, in the case of fruits, the number per pound.

MAIN DINING ROOM PROFITS. The features which make the Plantation Room a success include structural and architectural details, "eat-all-you-can-for-a-fixed-price", a system of tipping whereby the tips are paid to the cashier and divided among the kitchen and dining room personnel, and the system of ordering the meal without a printed menu form.

HOT FOODS HOT. For the service of hot roasts in the dining room a portable cart of stainless metal, heated with inexpensive canned heat has been designed. Includes construction details and diagram of the cart.

FOOD EDUCATION FOR GUESTS. Hotel Wellington, New York, has capitalized on food fads to increase the volume of dining room sales by adding a few new names to the menu and installing a "mineral bar" which dispenses raw vegetable and fruit drinks.

CITRUS FRUIT CHART. Lists the varieties of oranges, lemons, limes and kumquats, giving their source, the season in which they are grown, the size, whether or not they contain seeds, the thickness of skin and its character, their color, approximate yield of juice, their shape, grading, method of packing, general uses, and method of storage.

CUTTING FOOD COSTS. In this, the fourth in a series of articles on cutting foot costs, methods of controlling the leaks in paying invoices are explained. Careful checking of all invoices and verification of all statements prevent errors, both accidental and intentional. Case histories are given to show how leaks occur.

FOOD SPECIFICATIONS. This is a list of food specifications, weights, etc., drawn up by the Roger Smith Company. Weights and descriptions are given as well as standard portion weights for beef, lamb, veal, pork, poultry, shellfish, fish, butter, eggs, fresh vegetables, fruits and melons. The data is compiled in tabular form.

AMERICAN PRUNES. A complete discussion of prunes, giving varieties, where grown, and how prepared. Methods of packing and units, portion size, digestibility, vitamins, calories, etc. are given.

PLUM CHART. A chart lists varieties of plums, where they are grown, color, shape, flavor, uses, season, and size.

STRAWBERRIES. A chart lists 24 varieties of strawberries, their origin, size, flavor, color, shape, season and how to serve.

CANNED APPLES. A chart states grade, specifications, packing, size can, and general uses for apple sauce, apple cider, and dried apples.

CUTTING COSTS. Article 5 in a series of 12 states how the chef can cooperate in cutting down leakage from the following causes: over-preparation; substituting expensive food for cheaper items; carelessness; extravagance; indifference; inexperience; faulty menu pricing; dumping leftovers; spoilage; excess portions; faulty menu planning; lack of control of by-products; employees' meals and unrestricted eating; petty theft; and deliberate waste.

REFRIGERATION. The manufacture of ice, the making of ice cream, the production of ice water, and refrigeration geared to the storage of certain foods as in use in a Seattle hotel, are explained.

RECIPES. Recipes to use on a 50¢ meal with a 40% food cost are printed on cards for filing.

AIR-CONDITIONING. Explains how a 41-seat restaurant succeeded in increasing profits 20% with air-conditioning.

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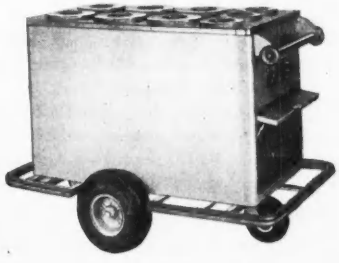

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NEWS NOTES

American Dietetic Association, Annual Meeting, New York, October 20–25, 1940. Sunday, October 20, is to be featured on the program as American Dietetic Association Day at the World's Fair. There will be an opportunity to see many exhibits of interest. The New York and the New Jersey State Associations will assist at the tea to be held in the late afternoon at the Fair. Transportation from the Pennsylvania Hotel to the fair is convenient and inexpensive.

Rates at the Pennsylvania Hotel are as follows:

Single room per day with bath or shower
$3.50 4.00 4.50 5.00 5.50 6.00
Double room per day with bath or shower
$5.00 to 8.00 with double bed
6.00 to 9.00 with twin beds
More than two persons in a double room
For each additional person in a double or twin bedded room, 2.00

The following schedule gives the railroad, bus and air rates for a round trip to New York from the cities listed:

Railroad Rates

	COACH	PULLMAN	BUS	AIR
Boston			$5.35	$21.50
Philadelphia	$3.60	$5.40	$2.45	$7.80
week-end	$3.00			
Washington, D. C.	$8.10	$13.10	$5.95	$21.90
week-end	$5.85			
Atlanta				
15 day limit	$25.40	$40.85	$18.55	$86.60
60 day limit	$27.30			
New Orleans				
15 day limit	$38.30	$62.65	$28.55	$132.90
60 day limit	$40.50			
Memphis				
15 day limit	$33.25	$54.25	$20.35	$111.74
60 day limit	$34.90			
Chicago	$27.25	$49.05	$19.80	$80.90
St. Louis	$31.75	$57.15	$20.75	$96.30
Minneapolis			$30.80	$108.40
Denver			$48.00	$173.54
Seattle	$90.00	$135.00	*$75.35	$240.90
Portland	$90.00	$135.00	*$75.35	$240.90
San Francisco	$90.00	$135.00	*$75.35	$269.90
Los Angeles	$90.00	$135.00	*$75.35	$269.90
			*$69.95	

* Three months excursion (any months).

Special Group Dinners. There have been a few requests for opportunities for special interest dinners during the convention. Chief among these have been requests for a dinner for dietitians who are teaching medical students. Nelda Ross, Presbyterian Hospital, New York, will be glad to have any other suggestions which anyone may have for group dinners. In other years suggestions have been for group meetings of the following: dietitians in small and large hospitals; dietitians in children's hospitals; dietitians and nutritionists engaged in public health work and in welfare work; dietitians engaged in college food service and school lunchrooms.

Eleanora Sense, local publicity chairman for the New York meeting, writes that local committees are industriously working to make the convention a success. The program chairman, Nelda Ross, has a committee with Lenna F. Cooper, Montefiore Hospital, Mary deGarmo Bryan, Teachers College, S. Margaret Gillam, New York Hospital, Eloise Davison, Home Institute, New York *Herald Tribune*, Hazel Munsell, nutrition chemist, Bureau of Home Economics, Helen Stacey, nutrition consultant, Henry Street Visiting Nurses, Helen S. Kintzing, home economics director, National Biscuit Company, and Frances MacKinnon, New York Hospital, as members.

Local arrangements for the convention are under the guidance of Alta B. Atkinson, chairman, New York Hospital. Her committee includes Mary Ruth Curfman, St. Luke's Hospital; Paula Dexheimer, Knickerbocker Hospital; Emma Baughman, Jewish Hospital, Brooklyn; Lillian Emoff, Montefiore Hospital; and Susan Paige.

Doris Tisdale, Standards Brands Inc., is chairman of the Hospitality Committee. The members of her committee include Beulah V. Gillespie, Sealtest Laboratories; Dorothy DeHart, Roosevelt Hospital; Elsie Stark, Best Foods Inc.; Adeline Wood, Teachers College; Isadora Anschutz, New York Hospital, Westchester Division; Helen Corbitt, New York Hospital; Margaret Kingsley, Good Housekeeping Bureau; Demetria Taylor, home economist; Carolyn Valentine, Murray Breese Associates; and Lilliam Emoff, Montefiore Hospital.

A Conference for Dietitians and Food Administrators, open to dietitians, food administrators in hotels and restaurants, school lunchroom managers and others interested in human

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nutrition and the public service of food, with an attendance of 64, was held at Florida State College for Women, Tallahassee, March 27–29, under the auspices of the Florida Dietetic Association. The planning committee included: Dr. Jennie Tilt, professor of physiological chemistry and nutrition, and Anna M. Tracy, dietitian and associate professor of institution economics, of the Florida State College for Women; Pearl Laffitte, home demonstration agent, Duval County, Jacksonville; Helen Davis, State Tuberculosis Sanatorium, Orlando; Bruce Davis, state coordinator, hotel training; Walter Murphy, Hollywood Beach Hotel; Fred Rossner, Hotel Good, Miami Beach; and F. O. Riddle, Florida State Hotel Association. The program was as follows:

Dr. James S. McLester, professor of medicine, University of Alabama, The Part Played by the Vitamins in Human Nutrition.

Dr. McLester, Deficiency Disorders Commonly Seen in the South.

Dr. Margaret Sandels, How Can We Best Approach a Solution of the Nutritional Problems of Florida.

Marie Casteen, director of food research and recipe development, Hotels Statler Company, New York, The Public Service of Food: Part I, The Menu, Part II, Producing the Menu.

Discussion Groups: Hotels and Restaurants, Hospitals, Public School Lunch, Nursery Schools, and College Food Service.

Garnett Andrews, manager, Hotel Seminole, Jacksonville, Personnel Management for Public Food Service.

Sabra Kennedy, Southern Equipment Company, St. Louis, Mo., Some Equipment Questions.

Miss Casteen, The Public Service of Food: Part I, Standardization of Recipes, Part II, Supervision of Processes.

John Ring, C.P.A., Mahoney, Ring and Arner, Miami, Food Cost Control Systems.

A Conference of Dietitians, sponsored by the Illinois, Indiana, and Wisconsin Dietetic Associations, was held in conjunction with the Tri-State Hospital Assembly at Chicago on May 1 with the following program:

W. L. Mallman, Ph.D., associate professor of bacteriology, Michigan State College, Dishwashing a Public Health Problem.

Mildred B. Johnson, manager, Grill and Tea Rooms, Marshall Field & Company, Job Analysis and Specifications for Personnel.

William H. Cathcart, Ph.D., director of laboratories, American Institute of Baking, Chemistry as Related to Baking Processes.

Margaret Cowden, chief dietitian, Michael Reese Hospital, General Discussion.

Business Meeting, Illinois Dietetic Association.

Margaret Hessler Brooks, Ph.D., assistant professor of nutrition, Department of Home Economics, University of Chicago, Nutrition Up to Date.

Mary Murphy, director, Elizabeth McCormick Memorial Fund, Health Work in Connection with Welfare Agencies.

Susan F. West, director of home economics, Milwaukee-Downer College, Observations of Child Feeding in Northern Europe.

Ada B. Lothe, chief dietitian, Milwaukee County Institutions, General Discussion.

Business Session—Dietitians' Section of the Tri-State Hospital Assembly. Election.

Dr. A. Hughes Bryan, instructor in medicine, University of Chicago, Estimation of the Vitamin C Content of the Diet.

Dr. N. Herbert Barker, assistant professor of medicine, Northwestern University, The Role of Sulfur and Phosphorus in the Diet.

Dr. Maurice L. Blatt, chief of pediatrics staff, Cook County Hospital, and Dr. Mary Zeldes, associate, Survey of Milk Modifications.

Lute Troutt, director of nutrition, University Medical Center, University of Indiana, General Discussion.

Business Session—Wisconsin Dietetic Association.

Mrs. Bernice T. Van der Vries, state representative, Seventh Senatorial District, Illinois, Government is Our Business.

The Dietetic Section, Western Hospital Association, met at the Biltmore Hotel, Los Angeles, April 8–11, with Martha E. Davis, University of California, as chairman and the following program:

Round Table, The Dietitian Keeps in Step with Advances in Nurses' Training.

D. Lois Burnett, R.N., director, School of Nursing, Glendale Sanatorium and Hospital, Developing an Adequate Teaching

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CALCIUM. Our product has .04%. Milk has .12%.

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VITAMIN B_1. Approximately 120 Sherman-Chase units in two biscuits. One cupful of milk adds approximately 77 Sherman-Chase units.

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ENERGY. In two biscuits and one cupful of milk are approximately 370 calories.

Add to this the Vitamin C provided by strawberries, and you have a breakfast of well rounded nutritional values—a breakfast hearty and hunger-staying but not extremely heavy.

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Program for Student Nurses in the Dietary Department.

Alice V. Bradley, supervisor of nutrition and health, Santa Barbara State College, and Marian K. Bailey, Department of Home Economics, Long Beach Junior College, Problems in Developing a Satisfactory Teaching Program in the Pre-Nursing College Curriculum.

Elvira Anderson, dietitian, Methodist Hospital, Los Angeles, and Lois B. Stuchey, dietitian, Glendale Sanatorium and Hospital, The Responsibility of the Dietitian in the Hospital in the Training of the Student Nurse.

Jane Sedgwick, food administrator, Department of Institutions, State of California, Food Cost Control in the Tax Supported Institutions.

Bina Wood, Talk-of-Town, Westwood, Food Cost Control in the Profit Making Institution.

There were sixty-five present at the dietetic luncheon meeting with hospital superintendents as guests. The speaker, F. Leslie Hart, assistant chief, U. S. Dept. of Agriculture, Food and Drug Administration, Los Angeles, discussed "The High Lights of the New Food and Drug Law and Its Effects on Food Control."

More than seventy-five dietitians registered at the educational booth sponsored by the California Dietetic Association. The local committee in charge was headed by Dr. Martha Davis, chairman, Jane Sedgwick, Mrs. Lucile Waite and Clancy Morrison.

Many of the dietitians attended the panel discussions led by Dr. Malcolm T. MacEachern, associate director, American College of Surgeons. James A. Hamilton, president, American College of Hospital Administrators, and The Reverend Alphonse M. Schwitalla, S.J., president, Catholic Hospital Association, were among the speakers.

A Northwest Dietetic Convention was held at Timberlake Lodge, Portland, Oregon, April 18-20. A luncheon with Dr. Margaret L. Fincke presiding, an afternoon general session with Edna Carl presiding, a dinner meeting with Eliza Harom presiding, and an evening fireside party comprised the first day's program. At the Friday morning breakfast, with Ruth Forsberg presiding, Douris Black discussed "Small Institutions' Problems." The morning session consisted of reports from various sections as follows: "Diet Therapy", Eloise Maxwell; "Community Education", Edna Cox; "Administrative Education", Miss Forsberg. A general session with Dorothy Anderson presiding was held in the afternoon with the following program: "Frozen Foods, Some Questions of Interest to the Dietitian", Mildred Boggs; "The Health Education Factors in the School Lunchroom," Lucy Case; and "Problems in the Maintenance of Women's Residence Halls," Margaret Terrell.

New Research Kitchens Opened at Pennsylvania Hotel, New York. To discover the best recipes of America's home kitchens and translate them into practical form for hotel restaurants, the Hotels Statler Company is inaugurating a unique research program in which European hotel chefs and American college-trained home economists will collaborate closely for the first time in culinary history. Headquarters for the research will be the extensive model kitchens opened April 22 at the Hotel Pennsylvania. A special feature of the ceremonies which opened the new kitchens was the balloting on rival versions of famous all-American delicacies culled from home kitchens in every part of the country. Chowders, fish cakes, corn breads, baked beans, chicken stuffing, shortcake, bacon, and apple pie were some of the controversial dishes voted on.

According to Mrs. E. M. Statler, chairman of the Board of the Hotels Statler, "Analysis of 161,647,958 Statler meal checks has showed that a steadily increasing majority of guests prefer typical American home kitchen delicacies to continental specialties. During 1939, chefs found that such all-American desserts as Apple Pan Dowdy and Blackberry Grunt outsold, by three to one, French pastry, Nesselrode Pudding and other continental dishes that used to be best sellers."

Each year since 1920, Statler menu analyses have indicated a marked swing in consumer taste toward menus which feature American delicacies with home kitchen flavor, Mrs. Statler reported. In 1926, John L. Hennessy, vice-chairman of the Board of the Hotels Statler, put into practice a brand new idea in hotel management by hiring college-trained women home economists to do recipe research. Marie Casteen headed up this staff of women who sought new methods of getting small-kitchen

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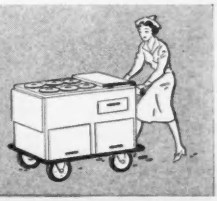

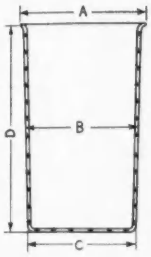

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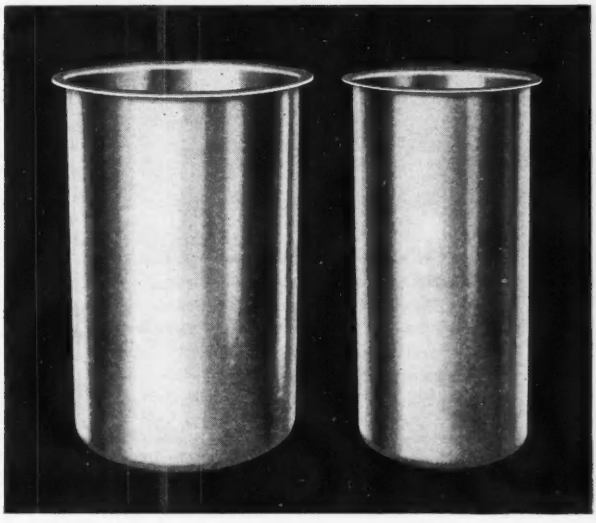

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flavor into hotel recipes for vegetables and salads which are favorites in American homes.

Lectures on the Vitamins. Mount Sinai Hospital, New York, presented a series of lectures on vitamins during April and May as follows:

Selig Hecht, Ph.D., Vitamin A and Vision, April 4.

Dr. Norman H. Jolliffe, Clinical Aspects of Vitamin B Deficiencies, April 17.

Dr. Albert M. Snell, Rochester, Minn., Physiologic and Clinical Significance of Vitamin K, April 18.

Dr. Gilbert Dalldorf, Valhalla, N. Y., Vitamin C, April 23.

Dr. Hans P. Popper, Chicago, Vitamin A, April 25.

Dr. Alwin M. Pappenheimer, Lesions of the Nervous System and Skeletal Muscles in Diet Deficient in Vitamin E, May 14.

Dr. Benjamin Kramer, Brooklyn, Vitamin D—Formation, Clinical Pathology and Therapeutic Indication, May 21.

Dr. William H. Sebrell Jr., Washington, D. C., Riboflavin, May 24.

Milk Economics. Complex factors of milk economics are visualized in an understandable way for the layman by a new pictorial prepared by the Milk Industry Foundation, Chrysler Building, New York. How the vast amount of milk used in butter, cheese, ice cream and other dairy products affects the economic picture, how milk production fluctuates compared with consumer demand, how the distributor functions, how the milk dollar is divided and other basic economic facts are pictured.

The Home Economics Department of the Woman's College of the University of North Carolina, Greensboro, entertained on May 3-4 at an Open House when the theme, "Careers", was discussed.

National Education Association, Department of Home Economics. Home economists everywhere are invited to attend the joint meeting with the Department of Secondary Education at the Schroeder Hotel, Milwaukee, June 30-July 2. Among the speakers will be Dr. Howard R. Anderson, president of the National Council for Social Studies, Cornell University, who will discuss "Educational Guidance of Youth"; Gladys Branigan, president of American Home Economics Association and dean of home economics, Montana State College, speaking on "The Place of the Home Economics Teacher in the Educational Program for Youth"; and Edna P. Amidon, chief of home economics education service, Federal Security Agency, United States Office of Education, Washington, whose subject will be "The Importance of Homemaking Education for Out-of-School Youth and Adults."

Employment of Married Women. The study of the employment of married women by the Research Committee of the National Federation of Business and Professional Women's Clubs will be completed early in July, according to Dr. Minnie L. Maffett, president of the federation, and publication of the study will follow.

California Dietetic Association. The Los Angeles Section of the state association met on March 11 with 65 members and guests attending. The dinner, served by courtesy of the Galen Company, constituted a demonstration of "Poyo" products handled by this company. Dr. Harold Crowe discussed "The Effect of Diet in the Treatment of Orthopedic Patients", and Frances Stern, Food Clinic, Boston Free Dispensary, "The Food Clinic".

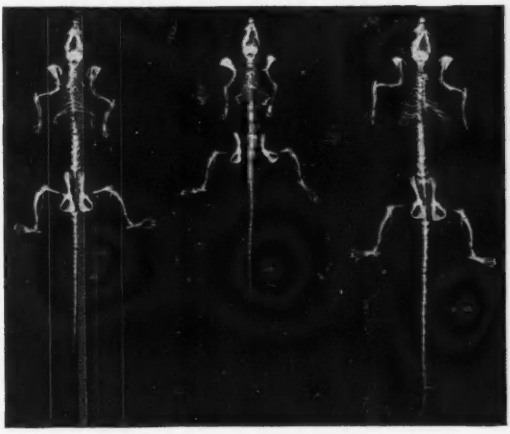
Following a general discussion concerning suspending the state *Bulletin* in favor of a newsletter, Dr. Davis moved: "that Miss Nelson write our state president that the members of the Los Angeles Section feel there should be further discussion among the members before action is taken concerning the *Bulletin*. Also, that in the meantime, the normal remaining numbers of the *Bulletin* be published for this year." The motion was seconded and carried.

The meetings of the Santa Barbara Section of the state association for the first half of the year have been devoted mainly to reports on various nutritional subjects and to study groups. One of the projects for the year is the compilation of a practical vitamin table for quickly estimating the vitamin content of diets.

In January a farewell dinner was given for Marie Ferguson who has been appointed chief dietitian at the Alameda County Hospital. Helen Honver, formerly dietitian at the Henry Ford Hospital, Detroit, has replaced Miss Ferguson at the County Hospital.

Theodora Corey, dietitian at El Encanto

166.8% more calcium for only 7/100 of a cent per day per man



● Assuming each person consumes 6 slices (approximately 6 ounces) of bread daily, 6 per cent non-fat milk solids included in your bread formula would yield 166.8% more calcium or as much as contained in 16 slices of milk-free bread—12 per cent milk solids yields 266.6% more calcium or nearly one-fifth the normal daily requirement of a man—calcium in its most digestible form, at ridiculously low cost.

Use dry milk solids not over 1½% fat★ in your bread and other foods for economical dietary improvements and greater appetite appeal. Send for special report on Bread Analyses and Other Information, without cost.

★ Dry milk solids not over 1½% fat is the product resulting from the removal of fat and water from milk. It contains not over 5% moisture.

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CHELSEA PRODUCTS, 281 11th Ave., New York

Hotel has taken over Miss Ferguson's chairmanship of the local group.

Harriett Schintger, a recent graduate of Washington, has replaced Leona Ead at the Santa Barbara Cottage Hospital.

Dr. J. W. Sherrill spoke on "Protamine Insulin" at the March meeting of the San Diego Section.

The February meeting of the Bay Section was held in the Life Sciences Building, University of California. Dr. Agnes Fay Morgan presided at the meeting, introducing Ruth Frytag who spoke on hyper-vitaminosis D, produced by excessive doses of irradiated ergosterol and irradiated cholesterol. Mrs. Davidson discussed vitamin P; Miss Crosby, vitamin B_2 complex; Miss Grieves, anemia produced by diet high in cholesterol; and Mrs. Grundy, foam substitutes.

In March a dinner meeting was held jointly with the Home Economics Women in Business at the Women's City Club in San Francisco. Julia Lee Wright gave a brief review of current literature on food.

The April meeting was held at the Berkeley General Hospital. Among the speakers was Mr. Leoni, food and drug inspector for the State Department of Public Health, who discussed food adulteration and stressed the addition of moisture as the chief source of adulteration. Miss Reynolds, food director of Mills College, spoke on buying standards for the institution.

Louise Esch, assistant dietitian at St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota, has been appointed director of the Department of Dietetics at Stanford University Hospitals, San Francisco. Miss Esch graduated from the University of Oklahoma in 1930, received her student dietitian training at the University Hospital, Ann Arbor, Michigan, and was employed as a staff dietitian at that institution through 1933. She has been at Rochester since January 1934. She was elected to Omicron Nu, the national honorary home economics sorority, while at the University of Oklahoma. Miss Esch is replacing Charlotte Sloan who resigned her post at Stanford University Hospitals on April 15. Miss Sloan had been connected with Stanford University Hospitals for thirty-two years. She is now residing in her new home at 2217 Divisardero St., San Francisco.

Dorothy Nesman, Edith Persons, and Mildred Mason, graduates of the Stanford School of Nursing, resigned their posts in the Dietetic Department of Stanford University Hospitals April 15.

Mary Magee, assistant dietitian at Stanford University Hospitals since 1935, resigned on April 15 to take charge of the Dietetic Department at the Dameron Hospital, Stockton, California. Miss Magee graduated from Oregon State College in 1924 and did her dietetic work at Stanford University Hospitals in 1932.

Canadian Dietetic Association. The fifth annual convention is being held at Macdonald College, Ste. Anne de Bellevue, June 13–15. Among the speakers are Katharine Fisher, Bertha Nettleton and Beula Becker Marble of the American Dietetic Association. Members of the A. D. A. were invited to attend the meeting.

Connecticut Dietetic Association held the annual spring meeting May 8 at St. Joseph College, West Hartford, with the following program:

Sister Mary Rosa, dean of St. Joseph College, Greetings.

Mr. C. W. Archbold, director of Food Service, American Airlines, Inc., Airplane Food Service—Past, Present and Future.

Frances MacKinnon, director, Nutrition Clinic, The New York Hospital, The Dietary Treatment of Constipation and Other Gastro-Intestinal Disorders.

Afternoon Tea. Hostesses, students of St. Joseph College.

Dr. Margaret Chaney, chairman, Department of Home Economics, Connecticut College, New London, Nutrition—1940 Model.

Recent meetings of New Haven dietitians have been held in the more interesting inns of the locality.

Winifred Riley, dietitian at Grace Hospital, New Haven, plans to attend the University of Chicago this summer for advanced work in nutrition.

Eleanor Warren was hostess to the New London group at the Jane Addams House, Connecticut College, on November 20. At the meeting on March 11 June Bricker reviewed a recent lecture by Dr. George R. Cowgill.

The Hartford section on October 19 held a dinner meeting at Howard Johnson's in Wethers-

Three servings per day of COCOMALT comprise an extremely valuable means of supplementing vitamins and minerals in both normal and therapeutic diets. The customary daily ration of three servings of COCOMALT contains:
Vitamin A 2400 I. U.
Vitamin B 225 I. U.
Vitamin G 150-225 S. B. U.
Vitamin D 402 I. U.
Calcium 450 mg.
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Cocomalt
TRADE MARK
MALTED FOOD DRINK
FORTIFIED WITH VITAMINS A, B, and D
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Gives High Nutritional Value

In almost every instance COCOMALT is served with milk . . . yet the nutritional value of milk may vary to such an extent through the seasons that an analysis of COCOMALT *and* milk may prove misleading. The actual analysis of vitamin-mineral rich COCOMALT (determined by monthly bio-assay) is so well controlled that it is constant at *all* seasons.

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field, with Marjorie Burr, president of the state association, as guest speaker. The November 16 meeting was held at the New Britain Hospital with an illustrated talk on "Softkurd Milk". On January 18 Dr. Ella Wilder presented interesting technicolor moving pictures at the Middlesex Hospital. Dr. Lucy Morgan, Hartford Tuberculosis Society, was the speaker on March 14, and her subject, "Organizing for Community Health."

Betty Whitney has resigned her position at the Waterbury Hospital, and is now in charge of the food service in a Pittsfield, Massachusetts, hotel.

The state association gained another member when Helen Jacobs, formerly of the Boston Lying-In Hospital, was appointed dietitian at the Hartford Retreat.

Josephine Wernimont is now on the dietetic staff of the U. S. Veterans Hospital, Newington.

Helen C. McLean, formerly of the Worcester Memorial Hospital, has accepted a position at the Waterbury Hospital.

Marguerite Faerber, formerly of Grace Hospital, New Haven, was married on February 24 to Dr. Floyd Riddick in Salt Lake City, and is now residing in Washington, D. C.

Zell Ahern, Norwich State Hospital, is state chairman of the Placement Bureau, and will cooperate with Rosina Vance, New England Deaconess Hospital, Boston, who is New England chairman of the A. D. A. Placement Bureau.

News Notes, the new publication of the association, made its initial appearance this spring, with Wilhelmina Mattoon Reid as editor.

Chicago Dietetic Association held the annual formal dinner March 26 in the Casino Room of the Congress Hotel. Dr. George Cameron of the Oriental Institute spoke on "A Day in Persia with an Archeologist." Dr. Malcolm T. MacEachern, associate director, American College of Surgeons, brought greetings from that group.

Katherine Mitchell returned from India in September and was married in Arizona to Mr. Wilfred Johnson, member of a banking concern in Bombay.

Chicago food clinics were visited in April by Frances Stern of the Boston Dispensary. Miss Stern was returning from California where she had been called by the serious illness of her sister.

Jane Billyeald, Presbyterian Hospital, has accepted a position as head of the ward service at the University Hospital, Ann Arbor, Michigan.

Zedia Rice, formerly at Buffalo Hospital, Buffalo, has accepted a position at Illinois Research Hospital.

Dr. Chester Coggeshall, St. Luke's Hospital, spoke on "The Evolution of Modern Diabetic Treatment" at the April meeting.

Through Marye Dahnke, the Kraft Cheese Corporation were recent hosts to the Chicago dietitians at their new plant, when a demonstration of salad making was presented.

Elizabeth Tufts, Wesley Memorial Hospital, has returned from a two-weeks vacation through the Southwest.

Phyllis Nessmeyer, formerly of the Illinois Central Hospital, has accepted a position as therapeutic dietitian at Miami Valley Hospital, Dayton.

Florida Dietetic Association. According to Anna M. Tracy, publicity chairman, the Florida State-Wide Public Health Committee, through its board of directors, has invited the Florida Dietetic Association to become one of its supporting organizations. The president of the dietetic association will serve as a member of the board of directors of the State-Wide Public Health Committee.

Dr. Jennie Tilt, Florida State College for Women, presented a paper on "The Nutritionist and the Public Health Program" at the annual conference, Florida Tuberculosis and Health Association, Orlando, May 13.

Georgia Dietetic Association. Among the speakers at the annual meeting, Athens, June 7, according to an open letter to the members, were Mary E. Creswell, School of Home Economics, University of Georgia; Mildred McElreath, Agnes Scott College; Ruth Buckley, University of Tennessee, Knoxville; Dr. Mary S. Rose, Teachers College, Columbia University; Dr. W. H. Sebrell, United States Public Health Service, Washington, D. C.; Dr. E. R. Watson, State Department of Public Health, Atlanta.

Marjorie Doyle, graduate of the University of Georgia and of the dietary course at Massachusetts General Hospital, has accepted a position at U. S. Government Hospital No. 48, Atlanta. During the past six months Miss

Opening new possibilities in the addition of iron to the diet

MOLASSES IS RICH IN IRON—
OVER 80% AVAILABLE

Not alone the iron *content* of food, but iron *availability* as well is now known to be of prime importance in the diet.

To determine the availability of the iron content of New Orleans molasses and to supply specific comparison with other sources of food iron, the makers of Brer Rabbit Molasses co-operated in carrying out chemical, biological and clinical research. A brief summary of results of the chemical and biological tests is reported here for the information of the medical profession.

The chemical and biological tests[1] show availability of iron in Brer Rabbit Molasses to be over 90% in the Gold Label grade, in the Green Label grade over 80%.

Taste preferences for molasses differ. Brer Rabbit comes in two flavors to meet all requirements. If a dark, full-flavored molasses is desired, specify Green Label Brer Rabbit (Molasses "B" in table). If a light, mild-flavored molasses is wanted, specify Gold Label Brer Rabbit (Molasses "A" in table).

Since other brands were not included in the tests, these figures should be regarded as standard only for BRER RABBIT NEW ORLEANS MOLASSES, made from Louisiana sugar cane.

Because of the low cost and palatability of Brer Rabbit Molasses, may we suggest that you recommend the use of molasses where a higher iron content in the dietary is desirable. Penick & Ford, Ltd., Inc., Manufacturers of Brer Rabbit Molasses, New Orleans, La.

QUICK SUMMARY

RESULTS: New Orleans molasses—both by chemical and biological procedures—is known to be one of the richest food sources of iron—and even more important, it has now been proven that this iron is from 80% to 97% available, depending upon the grade of molasses.

HOW TESTED: (A) Chemically and biologically[1]. (B) Clinically[2].

SUGGESTED USES: For infant and child feeding where its high calorie value *plus* iron content make molasses a valuable dietary asset; and to provide extra iron during pregnancy.

AVAILABLE IRON CONTENT: 0.653 mgs. per tablespoonful in Brer Rabbit Molasses—Gold Label grade. 1.078 mgs. per tablespoonful in Brer Rabbit Molasses—Green Label grade.

SUGGESTED AMOUNT: One to three tablespoonfuls daily. This may be taken plain, on bread, cereal, desserts or in milk. Physicians may vary the amount,depending on the iron need, age, condition and tolerance of the individual.

TABLE[1]

	Total iron mg/100 gm	Per cent availability	Available iron mg/100 gm
MOLASSES "A"*	3.2	97	3.1
MOLASSES "B"**	6.0	85	5.1
BEEF LIVER	8.2	70	5.7
OATMEAL	4.8	96	4.6
APRICOTS (*dry*)	4.1	98	4.0
EGGS	3.1	100	3.1
WHEAT	5.0	47	2.4
RAISINS (*Muscat*)	3.0	62	1.9
PARSLEY	3.2	50	1.6
BEEF MUSCLE	3.0	50	1.5
OYSTERS	5.8	22	1.3
CABBAGE	1.8	72	1.3
MUTTON	5.1	24	1.2
LETTUCE	1.5	63	0.9
SPINACH	2.6	20	0.5

*Brer Rabbit—Gold Label
**Brer Rabbit—Green Label
1. Am. J. Dig. Dis. Vol. VI, No. 7 (Sept.) pp. 459-62, 1939.
2. Clinical research completed. Paper being prepared for publication. Reprints of these papers will be sent physicians on request.

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Doyle served as dietitian in the P. K. Yonge School, University of Florida, Gainesville.

Members of the senior class in institution management of the University of Georgia have accepted appointments for 1941 as follows: Elizabeth Luke, Massachusetts General Hospital, Boston; Louise Slocum, Michael Reese Hospital, Chicago; Helen Buck, Florida State College for Women, Tallahassee; Selma Salms, University Hospital, Richmond, Virginia; Arlene Phillips, General Hospital, Lincoln, Nebraska; Miriam Tye, University Hospital, Augusta; Beth Bryant, Emergency Hospital, Washington, D. C.

The marriage of Dicksie Lee Lewis to Mr. Charles Gramling has been announced.

The School Lunch Association of Georgia was formed on April 18 in Atlanta with the following officers: president, Mrs. Berma Abercrombie, Atlanta; vice-president, Mrs. Adelaide Dunlap, Savannah; secretary, Mrs. Sara W. Brown, supervisor, W.P.A. Lunchroom Project of Atlanta; Treasurer, Mrs. Ed. Bryan, Columbus. The association plans to prepare a manual for rural school lunch managers. The Executive Committee of the Georgia Dietetic Association has voted their approval of this work and their willingness to help finance it as one of their community education projects.

Kentucky Dietetic Association. At the seventh annual meeting held at the Brown Hotel, Louisville, April 5-6, officers were elected as follows: president, Marie Jenkins, Louisville City Hospital; president-elect, Florence Imlay, Experiment Station, University of Kentucky, Lexington; vice-president, Mary Hood Gillespie, home demonstration agent, Florence; secretary, Elizabeth Helton, University of Kentucky; and treasurer, Mrs. Ruth Amidon, 2000 South Second Street, Louisville. Committee chairmen appointed were: Administration, Mrs. Christine Fox Berg; Diet Therapy, Anne Kilpatrick; Professional Education, Dr. Statie Erikson. Mrs. Isabel Wills, dietitian at Deaconess Hospital, Louisville, will succeed Florence Imlay as chairman of the Community Education Section.

Maryland Dietetic Association. The annual all day meeting was held April 13 in the new Home Economics Building of the University of Maryland, College Park, with Marie Mount and staff as hostesses. The meeting began at 9:30 a.m. when all were served with coffee and doughnuts by the senior home economics students, and given an opportunity to chat with members of the state group and also some from New Jersey and Delaware. Miss Mount then took charge of the meeting and told how she and her staff had shared in the planning of the new Home Economics Building. It is more like a large home than a recitation building. The walls are light cedar in color with woodwork of a lighter tone, and the floors of plastic tile are henna and black, and green and black. An attractive feature is a large lounge paneled in pine, like many early Maryland homes, and comfortably furnished as a living room. A kitchenette adjoins the lounge. Another excellent feature is a library with books, magazines and all kinds of illustrative materials for student use. Seven windows and cases have been built in for exhibit purposes. The class in merchandise display will be responsible for their decoration.

Mrs. Claribel Welsh then gave a résumé of the teaching course in the Department of Foods and Nutrition. Vienna Curtis told how the students were trained in practical art, and Mrs. Polly Kessinger Moore discussed "What is New in Textiles."

At the luncheon meeting Mrs. Hale T. Shenefield spoke on "Human Relations and Administration." Alma Bering then presented to Miss Mount a copy of the American Dietetic Association's recent publication *Quantity Food Service Recipes* for the library of the Home Economics Department.

Alma Bering and Alice Jané attended the banquet of the Philadelphia Dietetic Association on April 23.

Miss Bering was guest speaker at a recent dinner given by the Home Economics Club of Hood College, Frederick, Maryland, on the topic, "What Achievements You May Attain in a Food Service."

The annual business meeting was held on May 31 at the Johns Hopkins Hospital with Phyllis Dawson Rowe and staff as hostesses. Mary Barber, president-elect of the American Dietetic Association, was guest speaker.

Massachusetts Dietetic Association. The April meeting was held at the Women's Educational and Industrial Union, Boston. Dr.

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The "Jim Vaughan" is gaining popularity among leading dietitians. There are many reasons why this modern piece of equipment is rapidly taking its place in the hospital kitchen.

The Saving of Meats. The uniform and controlled cutting of meats, fish, and other meat products on "Jim Vaughan" result in equal and more portions. Users claim savings of 5 to 20% on their meat bills.

"Jim Vaughan" is Always Ready for work. It doesn't require highly skilled or experienced help. Portions are ready when wanted.

"Jim Vaughan" Cuts Many Foods, beef, veal, lamb, pork, fish, bones, or poultry. Besides such meats, "Jim Vaughan" also is extensively used on many other products to cut them into uniform portions.

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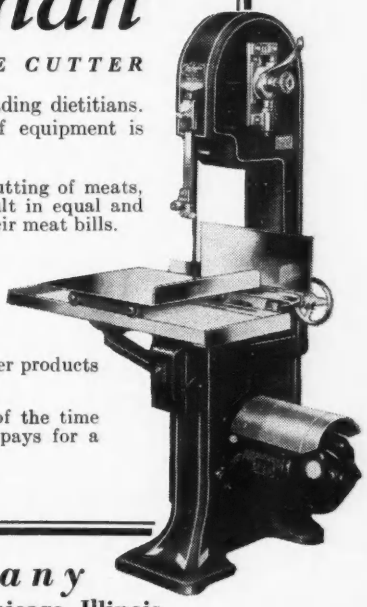

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TRADE-MARK

Harry B. Friedgood, instructor in medicine, Harvard University, gave an illustrated lecture on "Practical Aspects of Differential Diagnosis and Treatment of Obesity."

The "Refresher Course" planned by the association for all New England dietitians, nutritionists, school lunchroom and college residence managers, was held May 13–19 under the direction of Gertrude Spitz, Boston.

Mrs. Dorothy Cook Warner, formerly of the Massachusetts General Hospital, has announced the birth of a son on April 22 at the Massachusetts Memorial Hospital, Boston.

The association now has a committee on School Lunch Manuals of which Marjorie Foster, nutritionist, Quincy, is chairman. Bethel Ross, school lunch manager, Quincy, is working on the nutrition education problems with Miss Foster. Rena Simonini, dietitian, Massachusetts General Hospital, is working on standardized low cost recipes and menus for school; Elizabeth MacMillan, Framingham State Teachers College, equipment for small schools; and Helen Hartman, Milton, lunchroom administration. A member of the Parent-Teacher Association, Quincy, is on the committee.

Dorothea Nicoll, nutritionist, Massachusetts State Department of Health, has been working with individuals and groups of public health nurses concerned with prenatal care. She is also assisting the staffs of prenatal clinics. Material has been prepared and exhibits suggested for the use of the nurses.

Mary Tufts, formerly dietitian at Truesdale Hospital, Fall River, accepted the position of chief dietitian at Christ Hospital, Jersey City, effective May 1.

Many friends of Lillian Tani, administrative dietitian, Beth Israel Hospital, Boston, will be pleased to learn that she is recuperating from her recent operation at her home in Worcester.

Mrs. Carolyn Roop Pettit has resigned her position as assistant dietitian at the Free Hospital for Women, Brookline. Eva Esberg of Lols, Montana, a former student at Beth Israel Hospital, has been appointed to fill Mrs. Pettit's position.

Frances Stern, chief, Food Clinic, Boston Dispensary, spoke at the joint meeting of the Rhode Island Dietetic and the Rhode Island Home Economics Associations on the "History and Procedure of Food Clinics." An exhibit for diabetic patients on "Care of the Feet" was loaned by the Boston Dispensary to the Massachusetts Chiropody Association for their annual meeting.

Charlotte Raymond, community nutritionist, Newton, has been active this winter on the Boston Committee for Human Relief Needs with thirty Boston organizations represented. The object of the committee is to arouse public opinion regarding the need of increasing public welfare allowances in Boston.

Blanche Dimond, nutrition supervisor, Community Health Association, spoke on "Diet and Nutrition as Applied in a Community Health Agency," at the eighteenth annual conference of the Milbank Memorial Fund, New York, April 1–3.

Catherine Campana has resigned from the nutrition staff of the Community Health Association to accept a position as nutritionist in Hartford, Connecticut. She is to work jointly for the Community Service and Diocesan Bureau. Frances Humboldt, a graduate of Iowa State College, replaces Miss Campana in Massachusetts.

Marie Alexander has resigned as chief of the Food Clinic, Beth Israel Hospital. She is to be replaced by Rae Goldberg, her former assistant. Martha Kaplinsky, a graduate of Massachusetts State College and the Boston Dispensary course for student dietitians, is to assist Miss Goldberg. The teaching program of this clinic has been expanded to include the instruction of house officers in normal nutrition and diet therapy. Health exhibits are displayed twice a month in the outpatient department, stressing principles of health education and good nutrition.

Several dietitians and nutritionists were privileged to hear the fourteenth Sedgwick Memorial Lecture by Dr. Thomas Parran, Surgeon General of the United States Public Health Service, at the Massachusetts Institute of Technology. Dr. Parran spoke on "Nutrition and the Nation's Health."

Ruth L. White, Forsyth Dental Infirmary, spoke on "The Forsyth Viewpoint on Dental Health" at the April meeting of the Social Welfare and Public Health Section of the Eastern Massachusetts Home Economics Association.

How completely do infants digest quick-cooking cereals?

To determine the answer to this question, a prominent pediatrician, head of a large children's hospital, conducted an investigation among 26 infants between the ages of three and 24 weeks.* Fourteen were limited to a diet of "New 5-Minute" Cream of Wheat; while the other twelve were fed a mixture of three well known hot wheat cereals of the slow-cooking type.

The "New" Cream of Wheat was cooked five minutes; the other hot wheat cereals, half an hour.

Result. Upon examination of the 26 stools, not a single starch granule was observed.

Significance. There is apparently ample justification for the statement that "New 5-Minute" Cream of Wheat cooks to complete digestibility in five minutes of boiling.

Besides quick-cooking, made possible by an exclusive new process of pH control, this improved cereal offers additional advantages. It contains added phosphorus, calcium, iron and Vitamin B_1; and it tastes richer, wheatier. In no other respects does it differ from the "Regular" Cream of Wheat many physicians have advised for 45 years. Both are now available, at the same price, at most food stores.

For further information and clinical samples, write to The Cream of Wheat Corporation, Dept. S6, Minneapolis, Minn.

*Complete report soon to be published.

Mineral and Vitamin content of "NEW 5-MINUTE" CREAM OF WHEAT in average servings of 20 grams

PHOSPHORUS	118.0 milligrams
CALCIUM	101.0 milligrams
IRON	8.5 milligrams
VITAMIN B_1	11.0 Int'l Units

"Cream of Wheat" Reg. U. S. Pat. Off.

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Michigan Dietetic Association. About 150 members and guests attended the refresher course and meeting in Ann Arbor, May 3–4. Mayme Lewis, dietitian, Saginaw General Hospital, was chairman of the refresher course. This program was designed to help teachers, dietitians and institution managers with their particular problems. There was no admission charge. Dr. A. H. Smith, professor of Physiological Chemistry, Wayne University, gave the opening address, "Recent Advances in Nutrition". Therapeutic dietitians were particularly interested in two topics, dietary management of diabetes and ulcers. Esther Lieberman, therapeutic dietitian, University Hospital, Ann Arbor, led a discussion on diets for diabetic patients and Coralie Green, Harper Hospital, Detroit, led the discussion on therapeutic diets for peptic ulcer. Dr. Arthur C. Curtis, associate professor of internal medicine, University of Michigan, talked on "Recent Trends in Treatment of Peptic Ulcer."

Institution managers and administrative dietitians enjoyed trips through the kitchens of the residence halls and cafeterias on the university campus, and observed the new streamlined equipment and food service. At a dinner meeting in the evening Dr. John W. Riegel, associate professor of industrial relations and director of the Bureau of Industrial Relations, University of Michigan, spoke on "Obtaining the Best Results from Employees."

Adelia Beeuwkes, University Health Service, Ann Arbor, was chairman for the program of the annual meeting of the association on Saturday. In the morning, Margaret Cowden, dietitian, Michael Reese Hospital, Chicago, read a paper for Dorothy I. Lenfest on "The Business Side of the American Dietetic Association." Miss Lenfest was ill and could not attend the meeting. Ruth M. Griswold, research assistant, Michigan State College, talked on "Quality in Frozen Foods." In the afternoon, Dr. William D. Robinson, University of Michigan, discussed "Methods of Assessing the Levels of Nutrition."

At the luncheon meeting Lieutenant-Colonel Leon A. Fox, assistant professor of military science and tactics, University of Michigan, told about food in the army.

The meeting came to an end at a tea in the Rackham Building at which members of the Ann Arbor Dietetic Association were hostesses.

Officers for the coming year are as follows: president, Dr. Lillian B. Storms, Fremont Canning Company; vice-president, Margaret A. McLaughlin, University Hospital, Ann Arbor; secretary, Mary E. Herbert, Butterworth Hospital, Grand Rapids; treasurer, Maxine Boone, Mosher Jordan Hall, Ann Arbor; representative, House of Delegates, Margaret A. McLaughlin, University Hospital, Ann Arbor.

Mississippi Dietetic Association held the second annual meeting in conjunction with the Southeastern Hospital Association at the Edgewater Gulf Hotel, Edgewater Park, March 28–30. The program included breakfast at the Edgewater Gulf Hotel followed by the business session; a joint session with the Mississippi Home Economics Association, in session at the White House, Biloxi; a general session of the Southeastern Hospital Conference with emphasis on dietetics; and the annual banquet of the conference. Helen E. George, president of the Mississippi Dietetic Association, presided. Fairfax T. Proudfit, Memphis, was the principal speaker.

The following reports were presented: Lucile Smith, King's Daughters' Hospital, Greenville, "The 1939 Meeting of the A. D. A."; Lucy Warren Marsten, "The Georgia Dietetic Association"; and Mrs. Lona O. Jones, "The Alabama Dietetic Association". Since there were representatives of four states present, it was decided to organize a Dietetic Section of the Southeastern Hospital Conference. Fairfax T. Proudfit was elected temporary president, with authority to complete the organization of the section.

Missouri Dietetic Association. On April 12–13, 67 members of the association attended the seventh annual meeting at the Hotel Muehlebach, Kansas City.

Theo Stebbins, Koch Hospital, St. Louis, presided during the opening session. The president, Vera Davis, General Hospital, Kansas City, extended a welcome. Dr. P. M. Krall, University of Kansas Hospitals, presented a thought-provoking paper on "Uses and Abuses of Vitamins" and Mrs. Bessie Brooks West, Kansas State College, discussed "My Year In The Hawaiian Islands."

At the luncheon meeting Mrs. Beula Becker

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Marble, President of the American Dietetic Association, spoke on "The Modern School" and emphasized the importance of cooperation among the state associations and the national. Another guest was Dr. Ferdinand C. Helwig, president of the Jackson County Medical Society, who brought greetings from the members. The president of the Kansas City Dietetic Association, Rachael Reed, Kansas City Dairy Council, presided.

A "Questions and Answers" section, under the capable direction of Ethel Ollis, Research Hospital, Kansas City, opened the afternoon session. Aubyn Chinn, director of Consumer Relations, Borden Company, Chicago, presented an illustrated report of her recent study, demonstrating "The Economy of Combinations of Dairy Products in Low Cost Adequate Diets." Dr. J. D. Boyd, University of Iowa, discussed "Nutrition and Dental Caries." Mary Catherine St. John, Firmin Desloge Hospital, presided.

At the gala event of the meeting, the banquet, Mr. Alden B. Mills, editor of *Modern Hospital*, discussed "Writing for Publication." Vera Davis, president, presided and introduced the guests of the evening. Guests included Mrs. Marble, and Mrs. Gladys Hall Silkey, chairman of the Professional Education Section of the American Dietetic Association.

The following officers were elected at the business meeting: president, Vera Davis; vice-president, Rachael Reed; secretary, Marguerite Edwards; treasurer, Lillian Karnes. The following were elected to serve on the Nominating Committee: Bertha Bisbey, chairman; Fae Buckle, Mrs. E. Lee Shrader; Grace Zerbolio; and Marion Keller.

Immediately following the business meeting, Mr. James A. Hamilton, director of the New Haven Hospital, discussed "Personnel Management", and Gladys Hall Silkey, director, Department of Dietetics, St. Louis University, gave an illustrated talk on "Effective Nutrition Instruction." Louise Wilkonson, Barnes Hospital, St. Louis, presided.

At the luncheon meeting, during which Mrs. E. Lee Shrader, St. Louis, presided, Dr. G. Leonard Harrington, Kansas City, discussed "Human Behavior."

Exhibits sponsored by the Community Education Section and the Professional Education Section proved popular and added interest between sessions. A splendid exhibit showing illustrative materials used in connection with student nurses' courses formed the basis of the exhibit sponsored by the Professional Education Section. The Community Education Section devoted its exhibit to a display of the reference and text books on nutrition listed in the bibliography on normal nutrition prepared by the special committee of the Community Education Section of the American Dietetic Association.

New Jersey Dietetic Association. The regular spring meeting was held at the Essex County Hospital, Cedar Grove. Dr. Payne, Mrs. Harriman, chairman of the Board of Freeholders, and Lillian Park, dietitian, were hosts. Dr. Joseph Sutton of the hospital staff discussed mental diseases, using patients to illustrate his talk. During the afternoon session Mrs. Melvin, Auley Frizzell, Margaret McCoy, Hulda Luthman, Helen Fitzpatrick, Anna MacAskill, Katherine Booth, Harriet Stone and Alberta Dent presented various phases of "Learning Through Looking." Tea and a social hour concluded the meeting.

The annual spring social meeting was held at Morristown with Jane Spinella and Sally Mooring as hostesses and Juanita Trapp, Hulda Luthman, Florence Jones, Helen Irwin and Margaret Watson assisting.

Among members of the association who have recently announced wedding plans are Lillian M. Lowry, South Orange Welfare Department; Margaret A. Fahey; and Virginia Frick.

Margaret M. Rosoff has joined the staff of the Northwestern Hospital, Philadelphia.

Miss Worman, formerly of the Good Samaritan Hospital, Lancaster, Pennsylvania, is now at the Irvington General Hospital.

Elizabeth McHugh, formerly of the Mount Sinai Hospital, New York, is now at the Maplewood Hospital.

Helen G. Cory was married on March 1 to Mr. A. J. Iannone. She is now dietitian at the Bloomfield High School cafeteria.

"New Member Teas" were held at the Monmouth County Hospital, Long Branch, May 15, with Miss Taborn as hostess, and at Jersey City Medical Center, May 22, with Miss Garrett as hostess, assisted by Miss Banta.

The association held a luncheon meeting during the New Jersey Hospital Association convention in Atlantic City, June 7.

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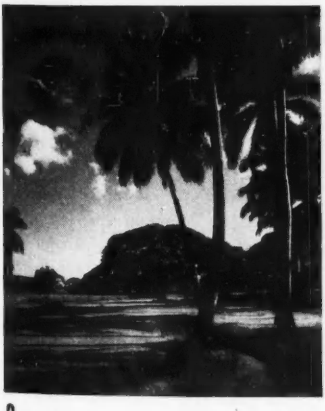

2 Here in beautiful Hawaii pineapples achieve a luscious perfection possible nowhere else. Warm sun, gentle rains and rich soil combine to create fruit of matchless goodness.

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Sophia Morris, Bernice Goldstein and Lillian Park attended the hotel show at Atlantic City, May 2.

Norma Hotaling, a graduate of Cornell University and of the student course, Harper Hospital, Detroit, is now assistant at the Hackensack Hospital.

A Diabetic Clinic, under the direction of Bernice Goldstein, has just been opened at Beth Israel Hospital, Newark.

Greater New York Dietetic Association held its annual business meeting and dinner on May 8, at which time Edith Barber presided over that part of the program entitled "Information Please". The following officers were elected: president, Dorothy Stephens, Post-Graduate Hospital and Medical School; treasurer, Helen Cothran, St. John's Riverside Hospital, Yonkers; nominating committee, Louise Anderson, Mt. Sinai Hospital; Alta Atkinson, New York Hospital; Marie Casteen, Hotel Pennsylvania Executive Offices; Bertha Nettleton, General Foods Inc.; and Helen Stacey, Henry Street Visiting Nurse Service.

New York State Dietetic Association held the eleventh annual convention at the Academy of Medicine, Rochester, May 2–3, with the following program:

Mr. Alfred I. Hess, Economy of Motion.

Dr. Isabel Wallace, Psychological Aids to the Vocational Preparation of Youth.

Dr. W. W. Percy, executive director, Rochester Academy of Medicine, Greetings.

Mary I. Barber, president-elect, American Dietetic Association, Obediently Yours.

Dr. Leon Winson, The Curriculum in Hotel Administration at Cornell University.

Members, New York State Dietetic Association, We're Ten Years Old—Telecasted.

Esther Kimmel, banquet speaker.

Dr. Albert D. Kaiser, The Rôle of Nutrition and Vitamins in Rheumatic Infection in Children.

Dr. Samuel H. Bassett, Steatorrhea.

Mrs. Dexter Perkins, Eating My Way Around the World.

Ruth deForest Lamb, What the New Food, Drug and Cosmetic Act Means to the Dietitian.

Marjorie M. Heseltine, Every Dietitian a Community Educator.

At the invitation of Dr. John W. Williams, the association was asked to select a group of ten outstanding dietitians and nutritionists, whose photographs were hung in the Academy of Medicine, Rochester.

The names of those who took part in the Hobby Show are as follows: Florence Mathews, Rome City Hospital; Marion Port, Faxton Hospital, Utica; Iona Skifs, West Hartford, Etta H. Handy, Rochester; Blanche Bohach, Rochester General Hospital; Grace Carden, Strong Memorial Hospital; Eleanora Sense, Westport.

Following are the elected officers for 1940–1941: president, Henderika J. Rynbergen, The New York Hospital, New York; president-elect, Mrs. Ethel Lewis Marth, Highland Hospital, Rochester; vice-president, Marie C. Sisson, Buffalo City Hospital, Buffalo; secretary, Genevieve Coon, Albany Hospital; and treasurer, Genevieve Moyer, Albany Hospital.

Convention chairmen were as follows: program, Ellen B. Guernsey, Strong Memorial Hospital; registration, Esther Rhodes, Rochester General Hospital; hospitality, Laura Comstock, Eastman Kodak Company; luncheons, Ethel Lewis Marth, Highland Hospital; banquet, Dorothy Andrews, John Marshall High School; publicity, Mrs. Donald D. Posson, Rochester; tickets, Dorothy C. Neal, Strong Memorial Hospital; trips, Dorothy Haas, Hillside Home for Children; ushers, Mrs. Georgie Hoke, Mechanics Institute; education exhibit, Blanche Bohach, Rochester General Hospital; and hobby exhibit, Etta Handy, Eastman School of Music Dormitories.

North Carolina Dietetic Association at its seventh annual meeting held in conjunction with the Carolinas-Virginias Hospital Conference, April 5–6, at the Robert E. Lee Hotel, Winston Salem, elected the following officers for 1940–1941: president, Eloyse Milner; president-elect, Jane Hereford; vice-president, Blanche Tansil; secretary, Evelyn Gibson; and treasurer, Frances Hill. Section chairmen were appointed by the president as follows: Roberta Jones, Professional Education; Tiphaine Burgess, Diet Therapy; Mabel Swanson, Administration; French Boyd, Community Education. Cora Gray was reappointed editor of the *Bulletin*.

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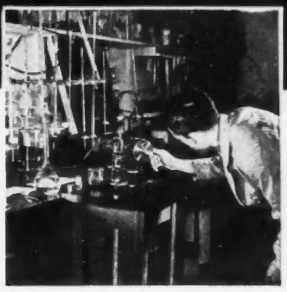

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Ohio Dietetic Association held its nineteenth annual meeting at the Deshler-Walleck Hotel, Columbus, April 2–4. The dietetic association is one of seven affiliated organizations which meet annually with the Ohio Hospital Association.

The following program was presented:

Wilma Robinson, president, Ohio Dietetic Association, Address of Welcome.

Dr. James Reeves, College of Medicine, Ohio State University, Carbohydrate Metabolism in Relation to the Modern Diet.

Lola Emerson, instructor in child guidance, Children's Hospital, Cincinnati, Educational Program in Children's Hospital.

Walter Costello, Dayton, Food Stamp Plan.

Dr. John H. Mitchell, director, Allergy Clinic, Ohio State University, Allergy.

Beula Becker Marble, president, American Dietetic Association, Pioneers.

Two films were shown, one depicting the dietary departments of Columbus hospitals, and one showing results of Dairy Council work.

The speaker at the banquet was Mrs. B. Y. Williams, Cincinnati, who read selections from her two books of poems.

Wednesday afternoon members of the Columbus Dietetic Association were hostesses at a tea at the Maramor.

At the business meeting the following officers were elected: president, Wilma Robinson, Christ Hospital, Cincinnati; vice-president, Alta Hirsch, Miami Valley Hospital, Dayton; secretary, Inistore Simms, Youngstown Hospital, Youngstown; treasurer, Minerva Harbage, White Cross Hospital, Columbus.

Pennsylvania Dietetic Association. The eighth annual meeting was held at Buck Hill Falls, May 30–June 1, with members of the Northeastern Pennsylvania Dietetic Association as hostesses. There are more than five hundred dietitians in this state association. Arrangements were in charge of the chairman, Mary Hahn, Moses Taylor Hospital, Scranton. Dorothy O'Brien, Mercy Hospital, Scranton, was in charge of hospitality and Sophia Podgorski, Nesbitt Memorial Hospital, Kingston, publicity. The program was planned around the four general fields of interest to the association. The speaker at the banquet on Friday was Mary B. McAndrew, superintendent of schools, Carbondale, and her subject, "Modern Educational Trends."

Philadelphia Dietetic Association met on April 9 at the Presbyterian Hospital to hear Dr. Phillip F. Williams, obstetrician, present a report on nutrition and dietary studies of pregnant women. Dr. Williams is associated with the clinics of the Presbyterian, Jewish and Philadelphia General Hospitals. With the assistance of Mrs. Fralin, nutritionist, he is making a study of the actual diets consumed by pregnant women, in each case checking the intake of protein, minerals and vitamins. He feels that at least 500 representative case analyses will be necessary to present a true picture.

The Fifth Annual Post-Graduate Institute of the Philadelphia County Medical Society met April 15–19 to discuss renal and cardiovascular diseases. A low caloric diet suitable for a cardiac patient, a high and a low protein diet were on display at a booth in charge of graduate dietitians. In the first two days, 500 copies of the diets were distributed to interested persons.

The annual dinner was a beautifully appointed formal affair held at the Wellington Hotel. After a delightful meal, Don Rose, columnist of the Philadelphia *Evening Ledger*, gave a witty and timely talk.

The officers for the following year were announced as: president, Dr. Elda Robb, Temple University; vice-president, Miriam Gaige, Philadelphia General Hospital; secretary, Sylvia Wade, Pennsylvania Hospital; treasurer, Frances Swenson, Mount Sinai Hospital; chairman of the Nominating Committee, Margaret Crozier, Philadelphia Department of Education; member-at-large, Elizabeth Miller, Philadelphia General Hospital.

Pittsburgh Dietetic Association. Virginia Linberg, a graduate of Iowa State College, is now assistant dietitian at St. Margaret's Hospital, Pittsburgh, Pennsylvania.

Dr. J. M. Strong of the West Penn Hospital staff will conduct ward clinics on "Medical Problems" for the student dietitians of the West Penn Hospital.

St. Louis Dietetic Association. The March meeting was in charge of Vivian Beneke, chair-

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"GOODNESS, NO!" exclaimed the surprised young man to Elsie, the Borden cow. "My name is William Todd. What made you think it was Borden?"

"Why, you look so bright and clean," Elsie replied, "that I figured you must be one of the Borden family. I didn't think *anything* could be so spotless unless it came from Borden's. They use *train loads* of soap and whole *lakes* of hot water every year! And not only hot water, but live steam!"

"Gee," said Bill, "that would take the hide right off you and me, eh? Why do they go to all this trouble?"

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man of the Dietitians in Business Committee. Mr. W. T. Nardin, chairman of the Social Security Committee of Missouri and vice-president and general manager of the Pet Milk Company, discussed "The Home Economics Trained Woman in Business."

The April meeting was in charge of Mary Catherine St. John, chairman of the Diet Therapy Section. Dr. Wendell H. Griffith, St. Louis University Medical School, spoke on "Choline Deficiency in the Rat."

A benefit buffet supper and card party was held at the Pevely Dairy in February.

Louise Wilkonson, chief dietitian, Barnes Hospital, and Jane Adams, chief dietitian, St. Louis County Hospital, spent a delightful spring vacation driving through Louisiana and the Gulf Coast early in March.

Mrs. Mildred Frier, WPA household aid director, resigned her position in St. Louis to become State WPA household aid director, with headquarters at Jefferson City. Catherine Lorenz has replaced Mrs. Frier as household aid director in St. Louis.

Mrs. Gladys H. Silkey, chief dietitian, Firmin Desloge and St. Mary's Hospitals, and chairman of the Professional Education Section of the American Dietetic Association, spoke before the Tennessee Dietetic Association, Chattanooga, February 17, and the Kansas Dietetic and Kansas Home Economics Associations at Wichita, May 7 and 8. On her return and at the request of the Kansas State College Home Economics Department, Mrs. Silkey visited their division.

Frances Dolan, former student dietitian at Firmin Desloge, was married to Mr. Joseph Holloran in St. Louis on March 30.

The Missouri Dietetic Association published in January the first issue of its new quarterly bulletin, *Missouri Mutterings*, which replaces its former mimeographed monthly. Mrs. Silkey is acting-editor-in-chief; Ruth Kahn and Theo Stebbins, co-editors; Dorothy Dolan, advertising manager; Ethel Ollis and Jane Adams, assistant advertising managers; and Regina Gottlieb, business manager.

Mrs. Beula B. Marble, president, Mary I. Barber, president-elect, and Dorothy I. Lenfest, business manager of the American Dietetic Association, met with the St. Louis Dietetic Association April 9–10 to discuss plans for the 1941 convention. The national officers were dinner guests of the association at the Chase Hotel and afterwards attended a performance of Noel Coward's play, "The Queen is in the Parlor", presented at the Little Theatre under the auspices of the St. Louis Dietetic Association.

Texas Dietetic Association held its sixth annual meeting at the Hotel Adolphus, Dallas, March 29–30, with the following program:

Dr. J. H. Grosclose, superintendent, Methodist Hospital, Dallas, Invocation.

Rose Richter, Methodist Hospital, Dallas, Welcome.

Nell Morris, Texas State College for Women, Denton, Response.

Mary I. Barber, president-elect, American Dietetic Association, Obediently Yours.

Mr. George Mueller, assistant secretary, School Lunchrooms, Kansas City, Training Plus.

Nell Wickliffe, Station Hospital, Fort Sam Houston, Opportunities for the Dietitian in Government Services.

Dr. Nina Fay Calhoun, Dallas, Food, Cosmetics and Bunk.

Grace E. Smith, Grace E. Smith Company, Toledo, Better Food and More Profit, the Secret of Control.

E. M. Hayman, Forum Cafeteria, Inc., Kansas City, Successful Restaurants.

Nell Morris, How To Save.

John W. Ebersole, John Ebersole's Restaurant, White Plains, New York, Observations of a Traveler.

Roy W. Cowan, Southwest Printing and Advertising Company, Dallas, Showmanship.

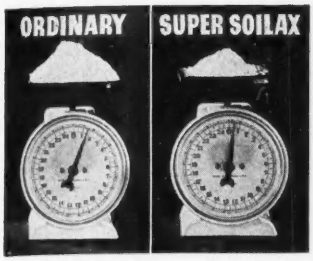
Fred Simonsen, Greenfield's Restaurant, Detroit, The Dietitian's Place in the Restaurant Business.

R. L. Fullen, chief, Weights and Measures Division, Dallas, Shop with Your Eyes Open and Buy with Confidence.

Mr. W. M. Fisher, instructor, Parasitology and Bacteriology, Baylor University Medical School, Dallas, Food Contaminations and Food Poisoning.

Dr. Edwin L. Rippy, Dallas, Recent Developments in Diet Therapy.

Daisy Ellithorpe, Dr. Ercel Eppright, Frances Low, Azalete Little, Edith Darling, Lola



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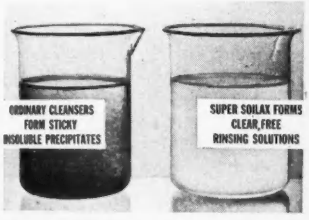

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Super Soilax does not precipitate hard water lime. It forms a transparent *free-rinsing* solution . . . makes dishes clear *quickly*, as well as *surely*. And equally important, Super Soilax does this extra job at a *lower cost per month* than many compounds selling for far less *per pound*.

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Wilcox, and Lilly V. Lane, Questions and Answers.

Mary I. Barber, The House of Delegates of the American Dietetic Association.

Selma Streit, business director, Scottish Rite Dormitory, The Placement Bureau of the American Dietetic Association.

Reports of section chairmen: Professional Education, Jonnie McCrery; Administration, Mary Bowling Clark; Diet Therapy, Laura McLaughlin; and Community Education, Katherine Fry.

Virginia Dietetic Association held the eleventh annual meeting at the Cavalier Hotel, Virginia Beach, April 26–27, with the following program:

Mrs. Alice P. Sells, executive assistant, Teachers College, Columbia University, Opportunities for Dietitians.

Gladys Wyckoff, field secretary, American Home Economics Association, Teaching Nutrition in the Lunch Room and the Class Room.

Frances MacKinnon, director of dietetics, New York Hospital, Recent Procedures in Diet Therapy.

Dr. Arthur Perkins, medical director, Norfolk General Hospital, The Dietitian—the Hospital Administrators—Better Quarter.

Dr. Florence Armstrong, Social Security Board, Washington, D. C., Basic Concepts in Research on Adequacy of Social Insurance Payments.

Dr. E. L. Bishop, director of health, Tennessee Valley Authority, Chattanooga, Some Fundamentals of the Nutrition Problem.

Dr. Hazel Munsell, Nutrition Section, United States Department of Agriculture, Washington, D. C., Practical Aspects of Recent Findings in Vitamin Research.

Special committees for the meeting were as follows: Publicity, Helen Roll Robertson, Bertha Ide and Gertrude Drinker; Registration, Ruby Lake and Margaret Fitzhugh; and Local Arrangements, Bertha Ide.

Wisconsin Dietetic Association met March 29–30, at the Loraine Hotel, Madison. Lillian Otto Fried, general chairman, and her coworkers, planned all details and the attendance exceeded expectations.

The program committee with Dr. Helen T. Parsons, University of Wisconsin, as chairman, presented a varied and stimulating program. Members of the University staff who participated were: Frances Zuill, "Advancing Training For Dietitians"; Dr. Conrad A. Elvehjem, "The Vitamin B Complex And Its Practical Application to Nutrition"; Dr. E. L. Sevringhaus, "Typical Endocrine Disturbance"; John M. Fargo, "Tenderizing Meat"; G. H. Rieman, "Quality in Wisconsin Potatoes"; Professor Edwin E. Witte, "Health Security"; A. O. Wilmot, "The Food Stamp Plan." Madison is one of the cities using the food stamp plan for distributing federal surplus commodities.

The question and answer period was devoted to four types of questions: hospital, teaching, equipment, and home service departments.

The luncheon meeting was devoted to committee reports. These were given by the following chairmen: Sarah Ellen Wenger, Madison, Community Education; Vivian Brown, Wausau, Administration; Frances Kelley, Wood, Diet Therapy. The activities of the work of these groups paralleled those recommended by the American Dietetic Association. Abby L. Marlatt presided at this meeting and gave each exhibitor an opportunity to speak.

There were three radio broadcasts given by Nell Clausen, Susan F. West, and Ada B. Lothe.

At Whitefish Bay High School's Vocational Guidance Night, Nell Clausen's subject was "Hospital Dietetics as a Profession".

The State Board of Nursing Education invited Ethel Keating, president of Wisconsin Dietetic Association, to discuss "State Board Examination Questions in Nutrition for Nurses". In addition to the president, Magna Werra, Elinor Ellison, Hertha Kirsten and Sister Josella were present.

The association's charts, with plans for the adult's normal diet, the child's, and the pregnant and nursing mother, and food equivalents for a quart of milk, were requested and exhibited at the convention of the Child Welfare League of America held at the Schroeder Hotel.

The association held the February meeting at Milwaukee County Hospital. A buffet dinner featuring New Orleans cookery was served. The centerpiece, a figure of a king, was labeled "King of Carbohydrates" instead of "King of the Mardi Gras." "Seeking A New Nutritional Picture," was the subject discussed by Elizabeth Rivers, Farm Security Administra-

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tion, and Ann Schrank, Works Progress Administration. Theresa Goetz, Doris Johnson, Dorothy Belknap, Ethel Keating and Janet Wing gave reports of the Continuation Course for Dietitians held at the University of Minnesota.

Three of the members of the state association were delegates to the two-day conference of urban and rural women, held at Madison in February. Women representing farm, labor, industry, education, and professions met to discuss "Abundant Living in the United States—Is It Possible? If so, What Obstacles are Evident?" Dr. Jones, United States Department of Agriculture, led the discussion.

Mr. and Mrs. Ernest Hathaway announced the birth of a son in March. Mrs. Hathaway was Dorothy Gensch.

Ruth Robertson, formerly at St. Luke's Hospital, is now with the Educational Department of the Junket Company.

Ruth Kowert is now located at Municipal Hospital, Waukesha.

Rachel Ruffner and Ruth Ahnert, Y. W. C. A., Milwaukee, recently entertained the members of the Milwaukee Dietetic Association at tea.

News from our Advertisers and Exhibitors. Mr. A. W. Jones of the *Standard Gas Equipment Corporation* has announced new features concerning their Vulcan heavy duty hotel line, introduced at the Midwest Hotel Show. This new line has been entirely redesigned and has a number of important new improvements. Appreciating the fact that more and more attention is being given to the appearance of equipment, the new line has been streamlined to a high degree. The equipment is so designed that when set up in battery it appears as one solid unit. This line has an entirely new finish, somewhat similar to the so-called "crackle" finish, but reported to be much harder, more durable and more easily cleaned. It is called "Vulcadur" finish. Mr. Jones calls attention to the new "Expando" units, as well as improvements in the Radial Fin Top, the new even-heat top, new open and fry tops. The range oven has been entirely redesigned, is larger, and due to a new method of heat circulation, it is claimed that baking can be done right up to the edges of the ovens. There are new heating units that speed up service and reduce costs, new high shelves, and new deep fat fryers with faster heat recovery.

Attention is called to the offer of Mary Hale Martin, home economist for *Libby, McNeil and Libby*, in this JOURNAL. Her new recipe book is available for three Libby labels and ten cents.

Ina S. Lindman, director of the Home Economics Department, *Fruit Dispatch Company*, has completed an attractive booklet entitled "Bananas, How to Serve Them." The booklet contains 56 recipes for the use of bananas and numerous unusually attractive illustrations in black and white and colors. In addition the book is crammed full with practical advice on cooking and other information on the purchasing and care of bananas.

Mr. Sherman J. Sexton, president of *John Sexton & Co.*, announces that since April 1 they have been exclusive distributors for Honor Brand frozen foods in the greater Chicago metropolitan market. Mr. Sexton states: "By augmenting our selection of frozen foods in large sized containers with Honor Brand frozen foods, and by adding to our line the frozen fish and poultry packed under the Honor Brand label, we are able to offer the largest and finest assortment of frozen foods. We decided upon Honor Brand frozen foods only after a very careful survey of the frozen food industry. In this addition to our line we believe that we can confidently pledge the same high standard of quality as has been maintained in our other foods for so many years. Our facilities for handling and distributing these products are the best. If you are not already using Honor Brand foods, we invite you to give them a trial. The quality will please you." In this connection it is of interest that this company made the first sale of frozen foods to a restaurant when on September 8, 1924, they sold John P. Harding, the Chicago restaurateur, a barrel of frozen cherries for pie baking. With the addition of the Honor Brand line of frozen foods to their own comprehensive line, the Sexton Company assumes an outstanding position in the distribution of frozen foods.

The "*Junket*" *Folks* "Food Servicer", available upon application, lists many seasonal recipes designed to vary the daily menu. Institutional recipe cards are also available.

Lillian B. Storms, nutritionist for the *Gerber Products Company*, is most enthusiastic about their new line of "Junior Foods"—coarser foods

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All gelatine.	Only contain 10 to 12% gelatine.
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for babies past the strained food age. She has prepared information arranged in a form suitable for card filing, giving the chemical analyses of the several types of special Gerber products. The cards include other helpful information in calculating the dietary. Dr. Storms calls attention to these new Gerber products, strained pear and pineapple, and a custard pudding.

Chelsea Products, makers of cafatrays, are introducing their new salt and pepper shaker tops, designed to replace glass tops and more adapted to the rougher institution usage.

Mary Pearl, home economist for the *Maltex Company, Inc.*, calls attention to her list of materials for use in teaching. These are especially helpful in a grade school. She would be glad to supply readers of the JOURNAL with her card recipes for serving 100 people.

Here is good news concerning the time-honored culinary standby, *Brer Rabbit Molasses*. High iron availability in molasses combined with a rich iron content places it ahead of practically every other food as a source of absorbable iron, according to recent findings. The iron in molasses is said to be from 80% to 97% available for use by the body, depending on the grade of molasses. The Gold Label grade of Brer Rabbit Molasses was over 90% and Green Label over 80%. The dietetic importance of these findings is enhanced by the low cost and palatability of molasses. It is highly recommended where a higher iron content in the dietary is desired.

The Cream of Wheat Corporation, through Mr. Robert R. Helmerichs, calls attention to a paper published in the April issue of the *Journal of Nutrition* by Pierce *et al.*, which is reviewed under the Current Literature section of this JOURNAL. The fortified cereal mentioned is the new Cream of Wheat.

Have You Heard?[1]

Ways to Save. To keep on hand orange peels, left from extracting juice, for orange nut bread, cookies, etc.: Place the peels in a pot of water and boil 40 minutes. Remove from the water and using a spoon, scrape off all the white membranes. Then place the peels in a covered container and freeze them in a sharp box. Orange peels prepared in this manner will keep for an indefinite period. When needed, remove the number of hulls required by breaking them apart. Grind them while they are in the frozen state, as they are much easier to grind when frozen and do not mash up as readily as when soft.

To save celery leaves for seasoning: Wash the leaves thoroughly, drain well, and place on a flat pan or tray in a warm place. After the leaves are very dry and crisp (about 3 or 4 days are necessary for this) rub them between the hands and break them into a powder. Sift through a strainer to remove any remaining stems. Pour the resulting powder into a covered jar. This gives a delicious flavor to soups, roasts, salads and sandwiches, and saves the use of fresh celery for seasoning.—*Nell Morris, Chief Dietitian and Assistant Professor, Texas State College for Women, Denton.*

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All Sorts of Hints. In the Spinach Timbale recipe on p. 243 of the new A. D. A. *Quantity Food Service Recipes*, outside lettuce leaves may be successfully substituted for spinach.

Ruth Cooper has invented a rice ball made of two bird-nest strainers, without handles, that fasten together. Although originally designed for rice she found it was also excellent as a container for spices and seasonings which are to be submerged in the food but not mixed with it.

Dietary department "waste products" can be profitably used as follows:

Neighboring florists will buy or the gardener can use potato and other sacks for balling plants that are to be transplanted, the butter tubs for potting shrubs temporarily, and the large tin cans with the tops completely removed.

Produce houses buy baskets, crates, and egg crates.

Glass jars and jugs can be used as storage jars in the dietary department or central supply division of the hospital or returned to the jobber.

[1] Editors Note.—All the contributions under this head are from members of the Texas Dietetic Association. Now that Texas has led off, it is hoped that other states will follow through with like contributions.

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Mother Nature herself enriches Ralston with a bountiful supply of vital food properties which she stores in pure whole wheat. None of these important properties is removed or altered in the milling process except that the coarsest outer bran layer is removed. The only enrichment is the addition of extra wheat germ, one of the richest natural sources of vitamin B_1. Even the flavor, so universally praised, is Nature's own!

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ANALYSIS IN GRAMS
Based on 30 grams Dry Ralston

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Cooks in 5 minutes

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Malt and lard drums, if not returnable, make sturdy trash containers.—*Elizabeth Atkerson, Dallas, Texas.*

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Utilization of Waste. Lumber yards and paint shops are willing to buy gallon jugs and quart grape juice bottles at 50 cents to $1.00 per dozen for gallons and 25 cents for quarts. One institution sells wide-mouthed gallon glass jars to a dairy at 10 cents each. Produce houses will often credit bushel baskets and potato sacks. The 48-pound tin cans in which shortening is purchased make excellent containers for the farmer who renders his own lard, and they are also fine for storing dry products such as beans, meal, etc. Tin cans of certain sizes can sometimes be sold to the farmer's wife who does her own canning, as they can be sealed by the regular household sealer, or if she uses glass jars these may be disposed of in the same way. In some institutions, the income from these sources is kept in a petty cash fund to buy favors and decorations for trays, or pieces of equipment which the equipment fund will not cover.

No. 10 cans serve nicely to store left-overs in the refrigerators, and smaller sizes can be used in the diet kitchen. Glass ointment jars from the drug room are also good for this purpose.

A certain size of glass pickle jar is an exact fit for small inhalators.

Large paper bags in which vegetables are delivered fit waste-baskets when cut in half and the top rolled down, and facilitate the removal of waste.

Clean brown wrapping paper may be sent to the surgery and articles wrapped in it for sterilizing.—*Lillian Johnson, West Texas Dietetic Association.*

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Making Hectograph Filler. Filler for hectographs can be made for much less than is paid for the commercial filler. The materials are as follows: 1 pt. glycerin 60 gm. gelatin and 1½ cups cold water. Heat glycerin in double boiler. Soak gelatin in cold water and dissolve in hot glycerin. Pour into a flat pan of desired size. With a stiff paper skim bubbles off surface and let set. These ingredients are usually bought by the hospital in large quantities for other purposes, and a pan from the ten-cent store may be used. The cost of this filler is therefore nominal.—*Mrs. Blair, West Texas Dietetic Association.*

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Ideas from Houston. An innovation in the tray service at Memorial Hospital, Houston, which is appreciated by patients, is the custom of serving special trays on birthdays and wedding anniversaries. For anniversaries, the husband or wife is invited to be a guest of the hospital and two trays are served in the patient's room. In addition to special foods for the birthday trays, tiny colonial nosegays or other small flower arrangements are used as favors and a small individual brass candlestick holds a birthday candle in a corresponding color. For the anniversary trays, a nosegay is the favor for the lady and a boutonniere for the gentleman. Extra expense for these and other tray flowers and decorations is defrayed by the sale of egg cases, scrap tallow and empty bottles. Some attractive decorated trays and special tray china for these party services, have been secured by the same means.

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Each year the president of the Medical Staff of the Methodist Hospital, Houston, appoints three physicians, who serve as a "dietetic committee". The committee is required to meet at least once a year and to make an annual report to the staff. Meetings can be called by the chairman or by the dietitian, who is an ex-officio member of the committee. Policies of the department relating to the staff, revision of the diet manual and discussion of other problems that arise make for an exellent spirit and better understanding between the physicians and the dietary department.

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The Houston Country Club finds that the #248 Dripcut pitchers (waffle batter pitchers, 48-oz. size, clear glass, chromium tops) make efficient, sanitary and economical dispensers and containers for French dressings and ice cream sauces. Whenever it is necessary to have a variety of dressings and sauces "on tap" at all times, these pitchers enable the operator to see what he is serving, to serve a standard quantity and to avoid the messiness and waste that result from ladling out sauces or dressings with a spoon.

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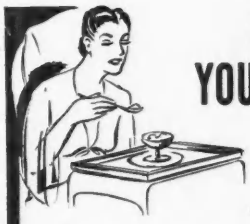

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WHO'S WHO IN THIS ISSUE

S. Margaret Gillam, B.S., M.A., Columbia University, and director, Department of Nutrition, The New York Hospital, as past president of the American Dietetic Association needs no introduction to most of the readers of this JOURNAL. She is a distinguished leader in the field of institution management and in her present position directs a staff of 250, including 20 dietitians, while over 7000 meals are served daily under her supervision. Her study, Part I of which is appearing in this issue, represents one of the most extensive statistical projects ever undertaken under the auspices of the American Dietetic Association.

Millie E. Kalsem received the B.S. degree in home economics at Iowa State College, Ames. She taught home economics in high school for one year before entering Michael Reese Hospital for student training. Since then she has been employed as a hospital dietitian. In 1935 Miss Kalsem took graduate work in chemistry and physiology at the University of Illinois Medical School. She came to Cook County Hospital in 1927 and was employed by the Cook County School of Nursing until 1937 when she was appointed chief executive dietitian at Cook County Hospital. Miss Kalsem was elected to Omicron Nu during her junior year at Iowa State College and was also elected to Phi Kappa Phi. She is a member of the International Association of Altrusa Clubs for Business and Professional Women.

Owen T. Webber is counsel on public feeding for S. Blickman, Inc., food service equipment manufacturers. Mr. Webber studied architecture at Reading University, England, and practiced for several years as an architect in Honolulu, T. H. He became interested in large group food problems during the World War when he served as a mess officer in the army. He was formerly president of Webber and Wells, Inc., food equipment engineers, and was a consultant on food service organization and equipment problems for six years in Russia, Finland, Sweden and England.

Faith Fenton, B.S., Iowa State College, M.S., Teachers College, Columbia University, and Ph.D., University of Chicago, is a member of the foods and nutrition faculty of the New York State College of Home Economics at Cornell University. Her research has been concerned with the losses of vitamin C during the cooking of fresh and frozen vegetables. She is the author of a number of bulletins and scientific articles.

Martha Potgieter, associate professor of home economics, The University of Hawaii, Honolulu, and since 1935 associate nutritionist, Hawaii Agricultural Experiment Station, received the B.A. and M.S. degrees from the State University of Iowa, and the Ph.D. degree from Columbia University. From 1933 to 1935 she was on the research staff of the Fels Foundation for Research in Pre- and Post-natal Development, Antioch College, Yellow Springs, Ohio.

Carl R. Wegner, M.D., University of Nebraska College of Medicine, is instructor in obstetrics and gynecology at Washington University, St. Louis.

Anna M. Tracy, 1938–1939 president of the American Dietetic Association, attended the 1940 White House Conference on Children in a Democracy at the invitation of the Honorable Frances F. Perkins, Secretary of the Department of Labor.

Hazel E. Munsell, Ph.D., was a contributor to this JOURNAL for October 1939.

Lenna F. Cooper, 1937–1938 president of the Association, was noted in this JOURNAL for November 1937.

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